

An Illustrated
HISTORY
— of —
ARCHITECTURAL
STYLES



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A HANDBOOK OF ARCHITECTURAL STYLES.

A. THE ARCHITECTURAL STYLES OF ANTIQUITY.

I. INDIAN ARCHITECTURE.

a. ROCK-TEMPLES.

§ 1. OUR knowledge of Indian architecture is essentially of modern growth, inasmuch as no reference to the subject is to be found in ancient European writings. Although, however, modern research and information are in general only partial, still they are sufficient for the acquisition of a knowledge of the peculiarities of Indian art. Our investigations on this subject are favoured by the fact that the ancient Hindoo race has subsisted to our own day, and has erected its monuments in the same distinctive type, although many minor alterations may have supervened with the lapse of time.

§ 2. When we take into consideration the great influence which the religion of the Hindoos exercised on the form of their buildings, it may be advisable, before proceeding further, to mention some particulars of the principal features of their worship.

In the religion of the Hindoos a distinction must be observed between the creeds of Brahma and of Buddha. They conceive Brahma, as the Supreme Being, to be formless. All emanations from him are worshipped and placed in their temples as idols : Siva, the great

god, the productive and at the same time destructive power of Nature, whose symbol is fire, and Vishnu, the preserving power, whose symbol is water.

These three chief gods, Brahma, Siva, and Vishnu, are also worshipped conjointly as a three-headed figure. Besides them, there is a large number of gods of inferior rank.

§ 3. Various sects exist among the Hindoos, the principal, however, are the Brahmins and the Buddhists, which are essentially antagonistic. The religion of Buddha claims to be a purer form of Brahminism, and Gautama, king of Magadha, surnamed Buddha, *i. e.* The Sage, is considered as its founder. The epoch when he lived is uncertain; it was, however, not later than 543 B.C., with which date, as that of the introduction of Buddhism into Ceylon, the chronology of the island begins. The religion of Buddha still prevails in Ceylon, as also in the Malay peninsula and in many of the East Indian islands, in the greater part of the Chinese empire, in Thibet, and amongst the Mongolian tribes.

§ 4. Two classes of monuments are to be distinguished in Indian architecture, besides later Mahometan buildings, which are not to be considered amongst the constructions of the Hindoos: *viz.*, real structural buildings, and cave-temples, hewn out of the solid rock.

§ 5. The latter kind of structure is frequent in the mountainous district of the Deccan and in the islands of Elephanta and Salsette, in the neighbourhood of Bombay, especially at Kanneri; in the interior of the country the caves at Karli and at Mhar, and those near Nassuk and Ajunta, and above all, the marvellous and magnificent temple of Ellora, are especially worthy of mention.

§ 6. We possess but little reliable information regarding the age of Indian architectural remains. The dawn of Indian civilization began, speaking in round numbers, between 2000 and 3000 B.C., while the date of the earliest sacred writings of the people, *viz.*, the Veda, may be assigned to about 1400 B.C.; and that of the great epic poems, the principal of which are the Ramayana and the Mahabharata, to about 1000 B.C. It was in these poems and through these poems, as in the case of the Greeks, that the diversified religious system of the Hindoos, namely, Brahminism, was developed.

In the middle of the sixth century B.C. the above-mentioned establishment of Buddhism took place, and in the sixth century A.D. the extirpation of that religion from India, by which time, however, it had extended itself over the countries which have been previously enumerated.

§ 7. The cave-temples are earlier than the structural ones; and amongst these a distinction is to be drawn between the Brahmin, which are the older, and the Buddhist.

Their general characteristics are rendered obscure by the multiformity of Indian architecture, and by a want of any settled method: since in excavating the rock neither organic laws nor constructive principles guided the work, as must needs be the case with structural buildings, but a purely arbitrary scheme based on an uncultivated taste, as well as an uncontrolled fancy, determined the shape of the design. The following points may, however, be selected as being, to a certain extent, normal:—

§ 8. The Brahmin cave-temples (Fig. 1) are, as a rule, open in front, and are sometimes connected with an independent structure hewn out of the solid rock. They consist, generally, of a main quadrangular space, on which the sanctuary containing the image of the god abuts; in some instances side-spaces also occur. This space is low, with a flat roof, supported by columns or piers, the front row of which forms the façade of the temple. Courts with colonnades and side-spaces in front of them are also met with. In some cases several temple-spaces are found in continuous succession.

A clear space, open above, is hewn out of the rock, and surrounds the detached and independent portions of the temple, which consequently has the appearance of being formed of a block left in the centre, the external configuration of which is shown by Figure 2, which represents the so-called Kylas at Ellora, which was formed

Fig. 1.



Cave-Temple of Dumas-Seyna at Ellora.

a Entrance. b Rock-Temple.
c Small Shrine.

about 1000 A.D. In the interior a grotto has been excavated, with several smaller caves in the background. The walls of rock which surround the open space are pierced with galleries containing little shrines.

Fig. 2.

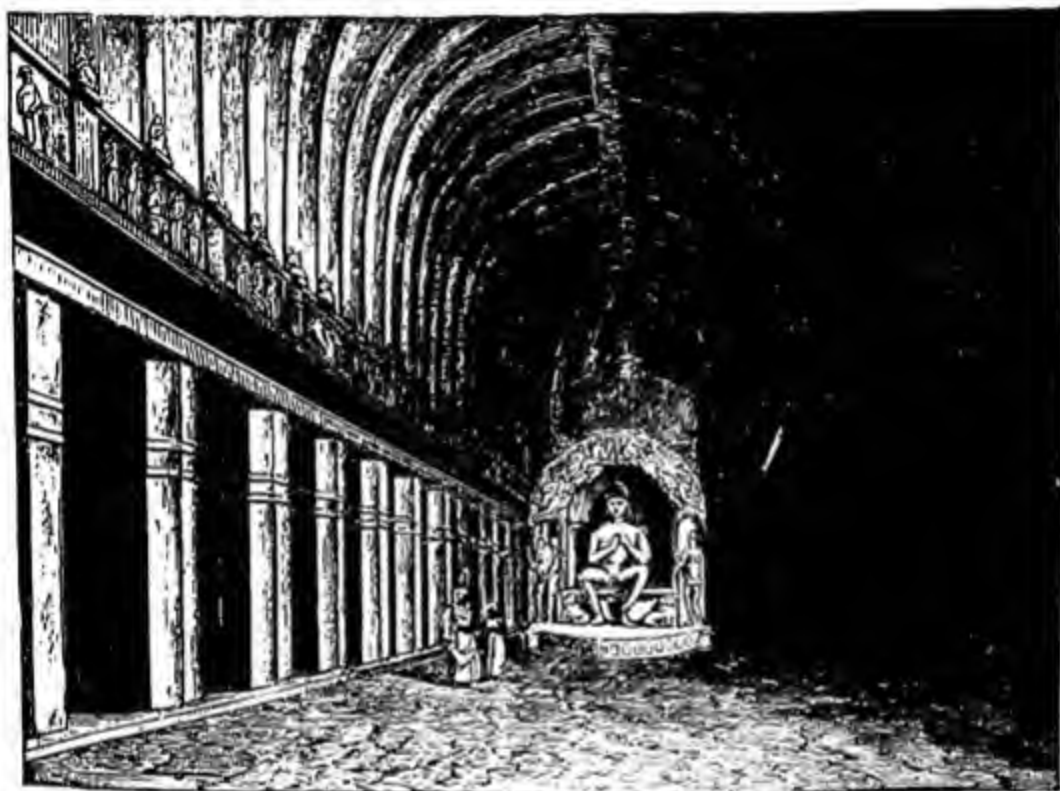


Kylas at Ellora

§ 9. The Buddhist cave-temples differ principally from the Brahmin in not having an open exterior. The internal design of these temples is invariably an oblong space terminating in a semi-circle at the further extremity, surrounded by a narrow passage, which is separated from the main space by rows of pillars. The vault-like roof is excavated in the shape of an elongated semi-circle, and at times assumes a horse-shoe form. The roof of the passage is flat. In the background of the central space is the shrine, with the constantly recurring symbol of Buddhism, the so-called Dagoba, a hemispherical block resting on a cylindrical pedestal,

and figurative of a water-bubble, to which the creed of Buddha likens the human frame, and which is especially intended to portray the transient nature of all that is earthly.

Fig. 3.



View of the Interior of the Buddhist Cave-Temple of Visva Karma at Ellora.

§ 10. The following peculiarities of detail should be especially noticed in the Indian rock-temples. The vegetable kingdom is but little represented in the decorations, which consist on the contrary of combinations of straight and curved lines, and of globular and flat shapes. Animals are also employed in the ornamentation, with a preference for the more powerful beasts, such as lions and elephants; these are introduced as guardians in front of the entrances, while in the interior they answer the purpose of supports, or are employed as ornaments in the capitals and friezes. These animals have probably a symbolic meaning, for both are considered sacred, and according to the Hindoo conception of transmigration, the souls of the mighty are destined to inhabit the bodies of the most powerful beasts. The bulk and weight of these animal forms

is in entire accordance with the architectural style of the whole structure ; as is also the case with the colossal human figures, which

Fig. 4.



Indian Pillar from the Rock-Temple of Parasona Rama at Ellora.

are ranged along the walls, cut out in prominent relief. These figures must have created an impression of awe in the dim twilight which reigned in the temple.

§ 11. The supports, which in every other style, whether as piers or columns, constitute the distinctive element, assume a vast variety of forms. In some instances, especially in the Buddhist caves, they are quite plain, quadrangular or octagonal in shape, and ornamented at the top with a shallow carved moulding, and surmounted by an abacus. They are generally, however, richer, and composed of four prin-

Fig. 5.



Interior of the Rock-Temple of Indra at Ellora.

cipal parts: (1) of a quadrangular base, which is higher than it is broad, and which terminates above in a sharp arris or in a kind of volute. On this rests (2) a short round shaft, which springs like a stem from its socket, and which is ornamented either with vertical bands or with flutes. Three circular bands of the same type constitute (3) the neck, on which rests (4) the capital, which generally assumes the shape of a flattened sphere, and which, as is shown in Plate 5, in most instances supports a quadrangular superstructure, with corbels and an architrave above, on which rests the roof. Since, consequently, none of the individual parts, which have astragals carried round them, stand out prominently, the unity of the pier must naturally suffer, and the columns appear squat and heavy, owing to their want of height in comparison with the breadth. This form of pier is also the basis of the columnar construction in structural edifices.

§ 12. Other capitals have the form of a cube instead of a sphere, and have volutes of a ram's-horn shape below. In this case the structure over the quadrangular pedestal is not round, but octagonal and ornamented at the sides.

The capitals are, moreover, sometimes covered with figures of animals, as has been mentioned above. At a much later period supports are met with in structural buildings, though not in rock-temples, formed of carvings of symbolical figures in high relief, as is shown by the pillar in Figure 6.

§ 13. The pillars in the Buddhist cave constructions are, for the most part, when compared with the Brahmin rock-temples, more slender and more beautiful, their rows closer, their ornamentation less excessive; the walls are not covered with semi-detached figures, and the whole is altogether simpler and freer.

In the same way as the most massive forms were in accordance with the precepts of the religion of Siva, so the more enlightened creed of Buddha called forth a simpler form of structure, and the architectural development maintained its connection with the religious.

These heavy massive shapes, these gloomy recesses, encumbered with gigantic carvings, are very deficient as works of art; but, by

their very shortcomings, they accord with the dark fantastic spirit of the heathen creeds of Hindostan.

Fig. 6.



Indian Pillar.

Fig. 7.



Tope or Stupa.

§ 14. With a view to the preservation of the relics of Buddha, or of priests and kings who were considered as sacred, dagobas of various sizes were constructed, called in the vernacular Topes, from the Sanscrit *stupa* (tumulus) *i.e.* body-hiding (Fig. 7). They consist of a cylinder-shaped substructure with pilasters, on which rests a second substructure without pilasters, supporting a superstructure like a cupola. The upper part of this spheroidal dome is in every instance destroyed, and it is consequently impossible to discover what further adornment crowned the whole edifice. The cupola construction is, however, only external, for the interior consists entirely of massive masonry, with the exception of some small spaces, in which, for the most part, were found valuables, such as jewels and coins of the period of from 100 B.C. to 600 A.D. This cupola form is considered to typify the water-bubble (which was held by the Buddhists to be the symbol of earthly transitoriness), inasmuch as the art of vaulting was still unknown, and the massive masonry only assumes that shape in the exterior.

§ 15. Many such monuments are to be found in the islands of the Indian Archipelago, especially in the island of Java; as particularly noteworthy may be mentioned those of Brambanan and Boro-Budor, which, however, are supposed to have been erected not earlier than 1100-1300 A.D. A great number of them are to be

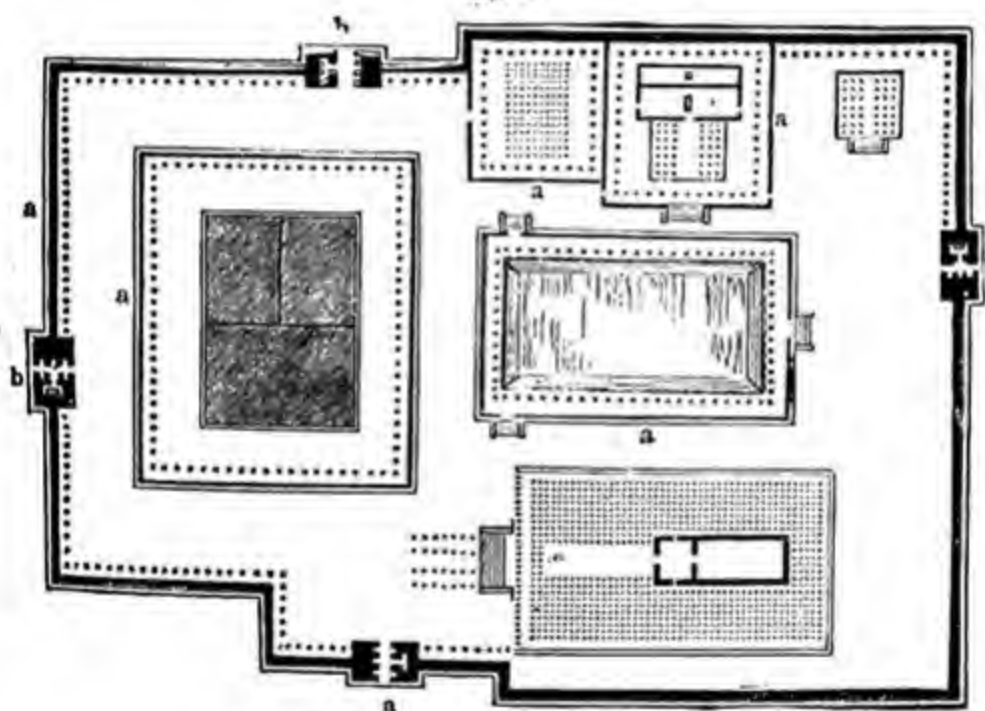
found on the Indus at Monikyala and Beloor, and also in Cabul, on both sides of the highway which leads from India to Persia and Bactria.

As mentioned above, similar dagobas of small dimensions, proportionate to the size of the construction, are erected in the sanctuaria of the temples.

b. PAGODAS.

§ 16. According to the description of a town given in the epic poem of Ramayana, an art, which was at the same time flourishing

Fig. 8.



Ground-plan of the Pagoda at Chillimbaram.

and magnificent, had given rise to structural buildings as early as 1000 years before the Christian era. Nothing reliable can be adduced concerning the age of the existing structural temples of India, which are called pagodas, from the word *bhagarati*, i.e. sacred house. They belong both to antiquity and modern times.

Some of these pagodas are wonderfully large and magnificent. They consist (Fig. 8) of one or more quadrangular courts with towers at the corners, surrounded by a wall (a). Large pyramids (b) rising in stages cover the entrance (Fig. 9), behind which

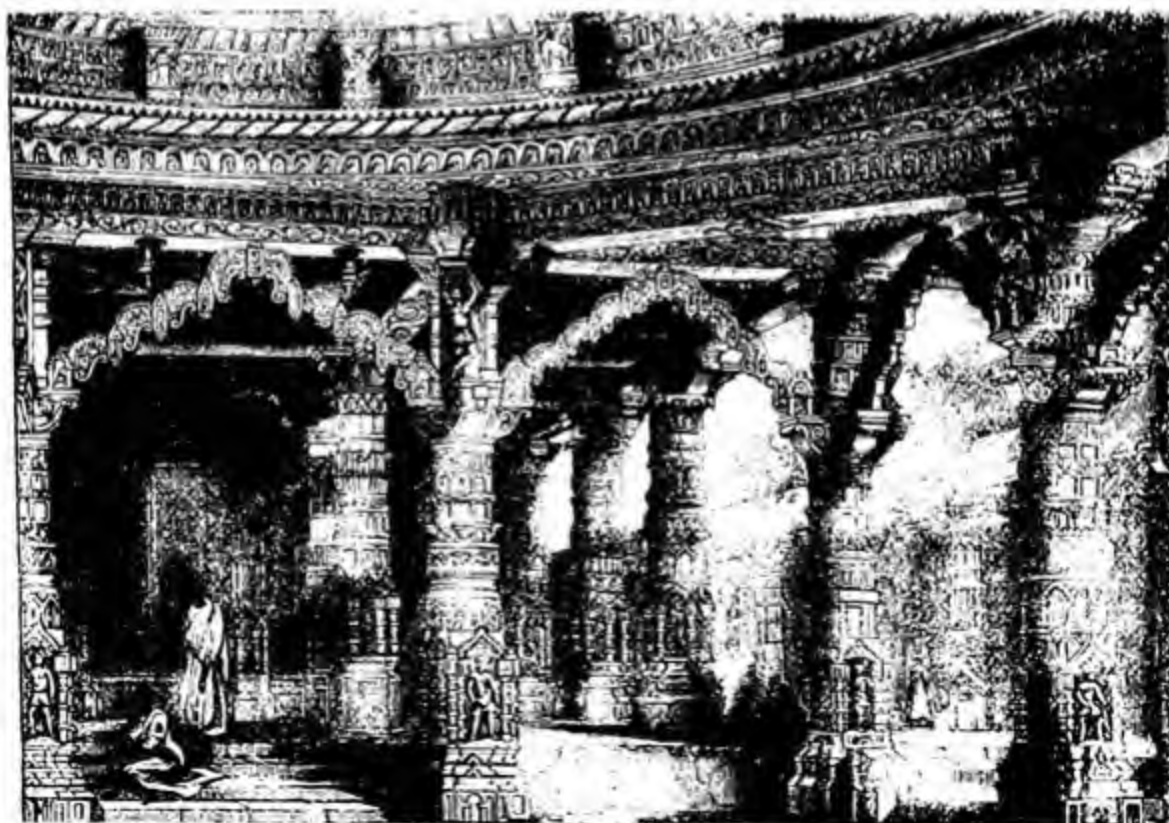
Fig. 9.



Entrance to a Pagoda.

extend colonnades. Inside the courts are lustral pools, colonnades, large halls, called Tschultris, which are used to lodge pilgrims in. Small side-temples appear with cupolas surmounting the accessory buildings. Behind the court is often a second and a third, in which, finally, the chief temple stands. Although the architecture of all these constructive designs has no pretensions to artistic or stylistic importance, still the drawings, Figures 10 and 11, illustrate, in forming an opinion of these buildings, how a wonderfully fantastic effect is produced by

Fig. 10.

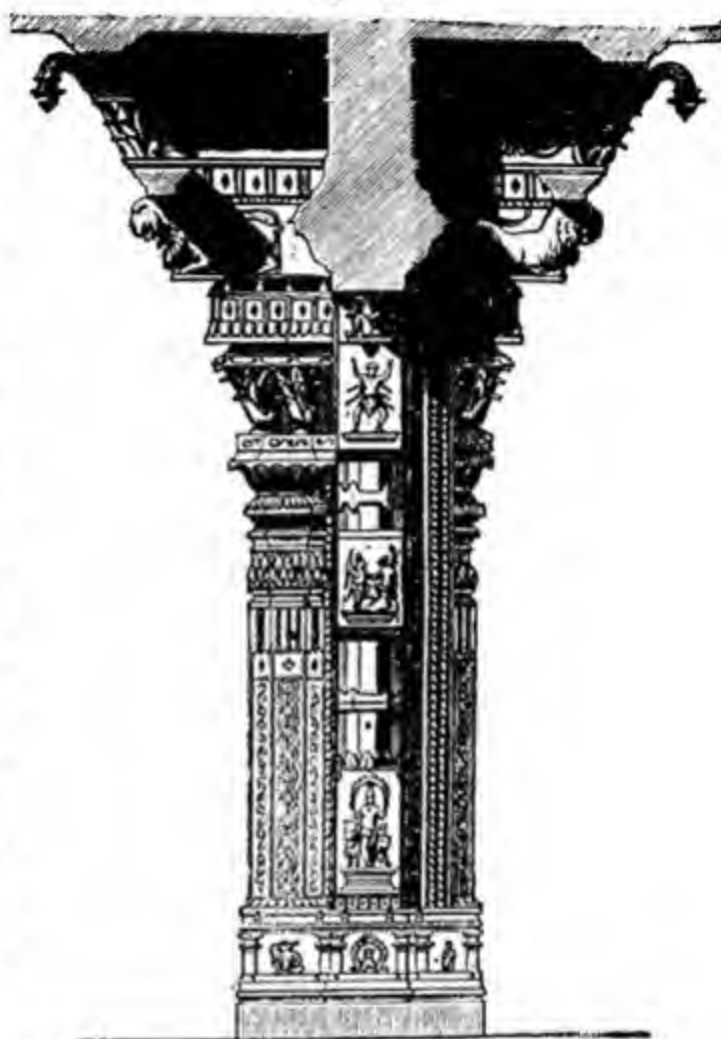


Temple of Vimala Sale (Jaina Architecture, 12th Century).

a tasteless excess in peculiar ornamentation and architectural features.

§ 17. The most important of these pagodas are those of Madura, Tanjore, and Chillumbaram. The island of Ramisseram furnishes also a large number of these sacred buildings, which are, in their way, magnificent. The most celebrated is the Pagoda of Jugernaut, which was only completed towards the end of the twelfth century after Christ. This was built after the model of the older temples which are now in ruins, and to be found in numbers in the neigh-

Fig. 11.



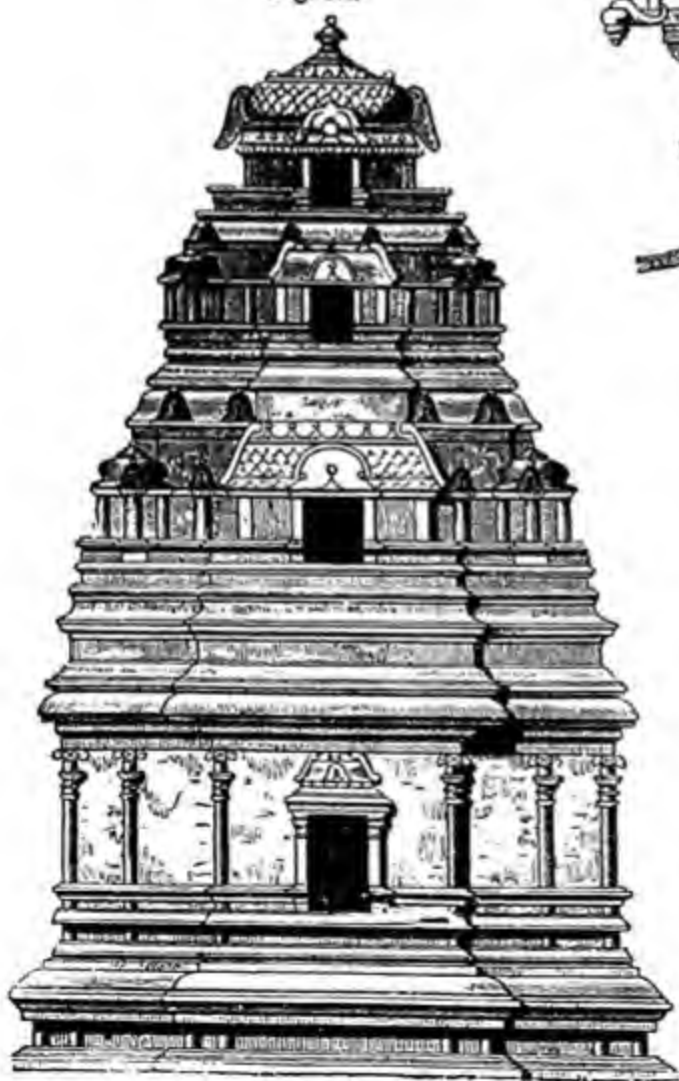
Pillar in Trimal Naik's Tschultri.

bourhood of the existing building. Monstrous swarthy idols, with eyes of sparkling diamonds, are ranged in the interior. The chief temple stands in the middle of a large square court, which is surrounded by a wall, and at the vast entrance are placed two enormous griffins, or winged lions in a sitting posture, facing eastwards. The main building consists of an octagonal tower, 180 feet high, resting on a square base. The angles of the eight sides of the tower are cut off diamond-wise, by which sixteen sides are formed, which are ornamented with flutes, and, approaching one another above in arched curves, form a sort of dome, on the top of which a knob or crown unites

all the sixteen sides together. From the vestibule in front of the entrance an uninterrupted view is obtained of the idol which stands in the midst of the temple. Behind the principal temple are colonnades, towers, and shrines of inferior gods. The whole is encircled with mouldings, human and animal figures, embellishments and inscriptions.

§ 18. All these buildings are of a pyramidal shape, with vertical stages, which are separated by curved roofs and terminate above in the form of a cupola (Fig. 12). Rows of small cupolas stand out from the roofs of the stages. The walls of these stages are covered in

Fig. 12.



Pagoda.

Fig. 13.



Fig. 15.



Fig. 16.



a bewildering way with pilasters and niches, with intricately cut cornices, with varied intersecting mouldings, and with manifold and fantastic embellishments and carvings. The pillars, which are round or octagonal, resemble the columnar structure of the rock

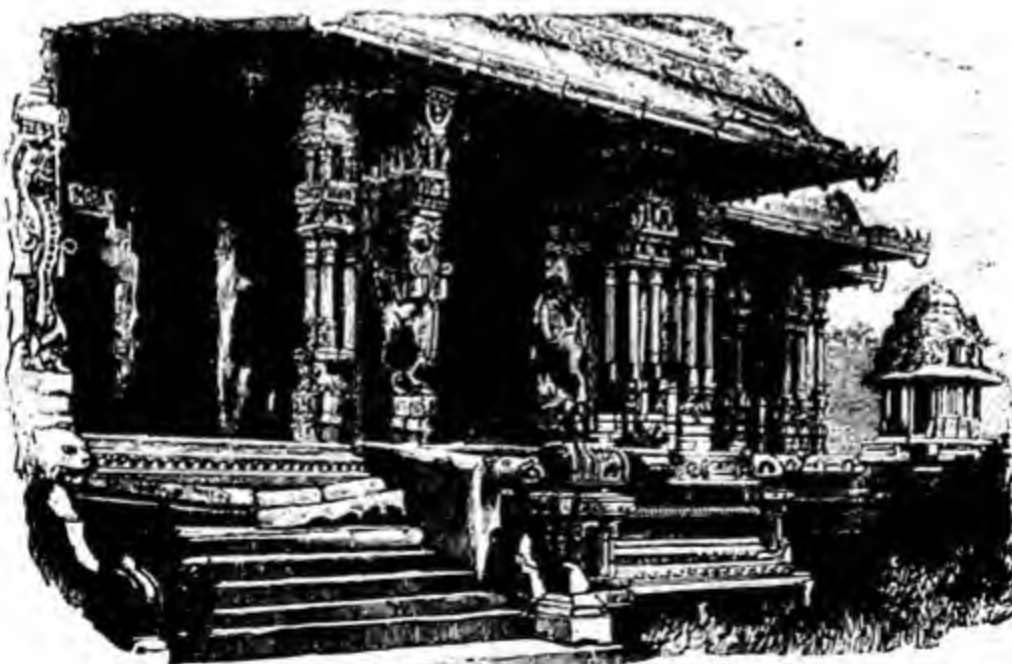
Fig. 14.



Elevation of the Entrance-gate of the Temple at Chillimbaram.

temples, and are richly ornamented in every part. The inner spaces are low and dark, but the cupolas are high and narrow. (The

Fig. 17.



Entrance-gate of a Temple at Bejanuggur. 16th Century.

cucurbitaceous, *i.e.*, gourd-shape cupolas of the more recent pagodas, with fluted pointed arches, are borrowed from Mahometan Architecture.)

To sum up, it should particularly be observed that in these structures full massive forms, instead of simple and suitable ones, predominate; that a pyramidal superstructure takes the place of the rectilineal and rectangular; and that, finally, neither the main outlines nor the minuter details are determined by fixed laws, but rather by arbitrary discretion.

Figure 13 represents a pilaster at the entrance-gate of the temple at Chillimbaram (Fig. 14), Figure 15 a column, Figure 16 a moulding, and Figure 17 a front of a temple of late Indian style.

II.

EGYPTIAN ARCHITECTURE

§ 19. We possess varied information regarding the existence of an early civilisation in Egypt, both from the Bible and from Greek and Roman authors. Religion, as well as peculiar manners and customs, exercised a great influence on the form of architecture. Besides other gods, Osiris and Isis were especially venerated; perhaps, because a peculiar relationship was established between the inundation of the Nile and the synchronous change in the sun's orbit. This yearly inundation of the Nile was of the very highest importance, as it was only from this source that the land derived its fertility. Many of the gods were represented with heads of beasts: and various animals were themselves accounted sacred, as cats, serpents, dogs, ibis, hawks. Two bulls met with especial veneration; Apis at Memphis, and Mneris at Heliopolis.

§ 20. It is supposed that Egyptian religion and culture took their rise in the district of Meroe in the interior of Africa, and that following the course of the Nile they thence spread over Egypt, where, at first, Thebes and Memphis, and in later times under the Greek kings, Alexandria especially, were powerful and important places; particularly the first-mentioned of these towns, as its mighty ruins testify, which are situated in the neighbourhood of the present town of Shenay, and not far from the villages of Assur, Naha and Messura.

§ 21. The development of Egyptian culture is to be sought in the primeval history of this people, and its origin may be assigned to as early a date as about 1700 B.C., when the country was freed from the nomad race of the Hyksos, which had burst over it several centuries previously.

The essentially brilliant period of Egyptian art was in the middle of the twelfth century, B.C., in the reign of Sesostris or Ramases at

Thebes, as is to be seen by the stupendous monumental buildings and figurative representations of that king, which have reference to his glorious campaigns, and on which his name shines resplendent. This flourishing condition of Egypt lasted for centuries; till about the middle of the seventh century, B.C., Psammeticus by the admittance of foreigners partially put an end to the exclusiveness which the country had hitherto enjoyed. From the beginning of the sixth century, B.C., however, the country was subjected to the Persians under Cambyses, then, from the time of Alexander the Great, to Grecian rulers, till it finally passed under the sway of Rome. Still, however, during these various periods, Egyptian nationality maintained its existence till the epoch of the extension of Christianity. Through this agency, and especially in consequence of the conquest of the country by the Arabs at the beginning of the Middle Ages, the old order of things was changed, and a new condition was effectuated.

§ 22. From the expulsion of the Hyksos till about the third century, B.C., a culture, which lasted for 2000 years, is to be traced in the monuments of Egypt. In all probability, however, the epoch of the origin of many of these monuments must be accepted as a much earlier one: for when the yearly average rise of the soil through the inundation of the Nile is taken into consideration, the present elevation of the surface above the old level on which the monuments of Thebes were erected, leads us to the conclusion that they must have been constructed about 4760 years before the commencement of the present century, that is to say, 3000 years before the birth of Christ. In these monuments at Thebes fragments have been found which were wrought in a similar style on the reverse side, and which must therefore have formed part of former buildings, and this fact points to the conclusion of the existence of an already long-established culture at the time of the construction of the present monuments.

§ 23. The monuments of the golden age of Egyptian art, namely, the time of Sesostrius, are those of Homer's hundred-gated Thebes, the capital of ancient Egypt, the diameter of which city was two geographical miles each way. Its ruins are called after the villages which now stand on its site, as the temples and palaces of Luxor and Karnak, with an avenue of colossal sphinxes 6000 feet long; a palace and the sepulchres of Medinet Abu and Kurnah. Here, too, in the

neighbourhood are to be seen the Rock-Tombs, the so-called "graves of the kings," and still further, below Thebes, the Temple of Tentyris (Denderah).

§ 24. The most important of the monuments of Nubia, and which have only become known in our own times, are the Rock-Temples of Ipsamboul, the monuments of Derri, Kalabsche, &c.

In Upper Egypt, the well-preserved temples in the islands of Philæ and Elephantina; those of Syene, Ombos, Esneh, &c.

In Central and Lower Egypt no important remains exist: of the capital, Memphis, we find only tombs, and the pyramids, the sepulchres of the kings.

The Egyptian monuments, of which we possess any knowledge of, consist for the most part of pyramids, the tombs of the kings, and their palaces and temples.

§ 25. The pyramids (Fig. 18) form a distinct class by themselves in Egyptian architecture, and present no points of resemblance with other structures. Their form is substantially invariable—a simple mass resting on a square, or sometimes approximately square, base, with the sides facing with slight deviations towards the four principal winds, and tapering off gradually towards the top to a point or to a flat surface, as a substitute for this apex.

Fig. 18.



Pyramid of Ghizeh.

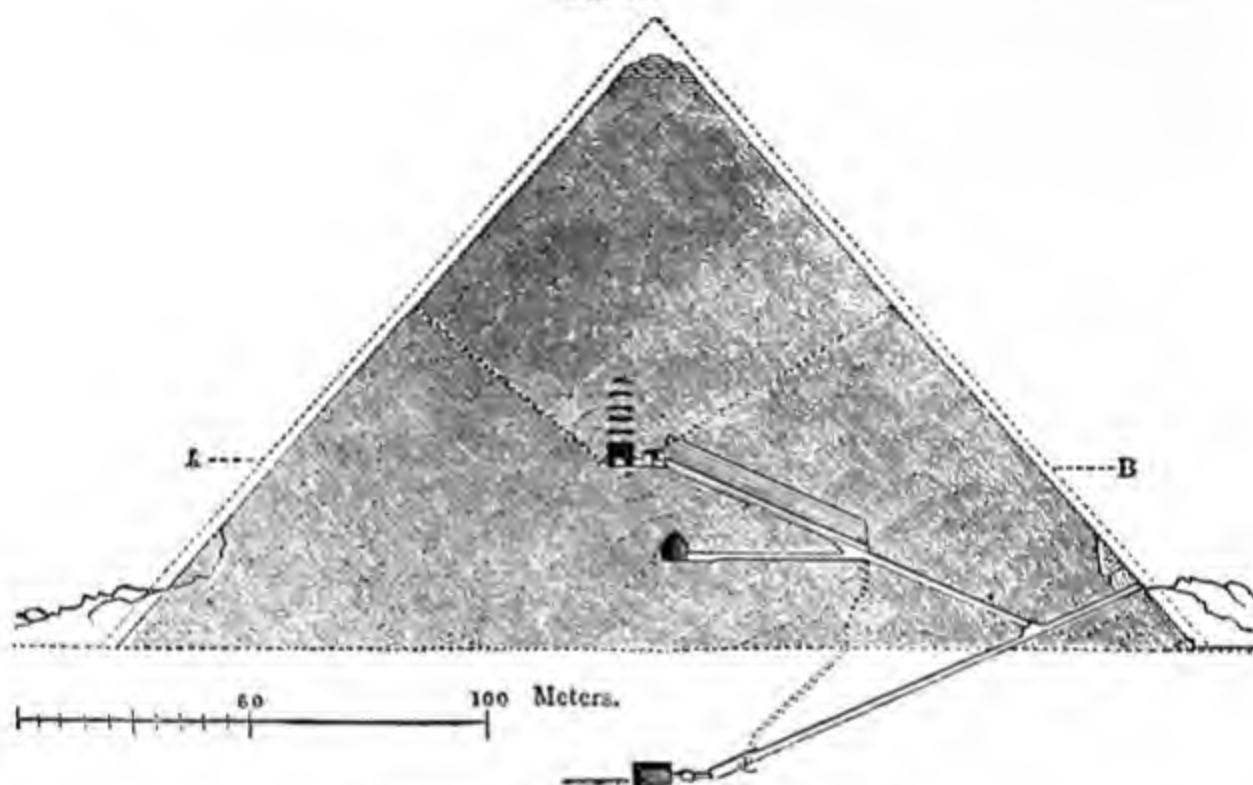
The proportion of the base to the height is not always the same, nor is the angle of inclination uniform.

The pyramids were constructed in platforms, and then revêted or coated with blocks or slabs of granite, as may still be observed in incomplete pyramids. Recently the supposition has been maintained that in the case of the largest pyramids, a smaller one was first erected as a nucleus, and subsequently enveloped by another layer.

The interior of these massive structures contains narrow passages

and some totally dark halls or chambers, and probably served as the burial-places of the kings who had caused them to be constructed. The entrance to these buildings is raised considerably above the level

Fig. 19.



Section of the Pyramid of Cheops at Ghizeh.

Fig. 20.

Section of a Corridor
in the Pyramid of
Cheops.

of the base, and was blocked-up by a portcullis of granite, so as to be on ordinary occasions inaccessible. In the pyramid of Cheops the entrance is raised about 47 ft. 6 in. above the base. From thence a passage about 320 ft. long conducts at an angle of $26^{\circ} 41'$ downwards to a chamber whose roof is about 90 ft. beneath the base of the pyramid. From this chamber leads a corridor which has not yet been explored. As the section in Fig. 19 shows, another passage, starting in an upward direction from the above-mentioned downward-sloping corridor leads to another chamber, and a still further passage branching off again, and growing smaller as it ascends (Fig. 20)

conducts to the so-called Crowning Hall or King's Chamber, which is 34 ft. 3 in. long, and 17 ft. 1 in. broad.

The roof of this apartment is formed of massive blocks of granite, over which, with a view to supporting the weight, other blocks are laid, with clear intervals between (Fig. 21). The size of the pyramids is various, but for the most part very considerable. The largest is one of those at Ghizeh, and has a perpendicular height of 448 ft. and a breadth of 728 ft. on each side of the base.

Fig. 21.



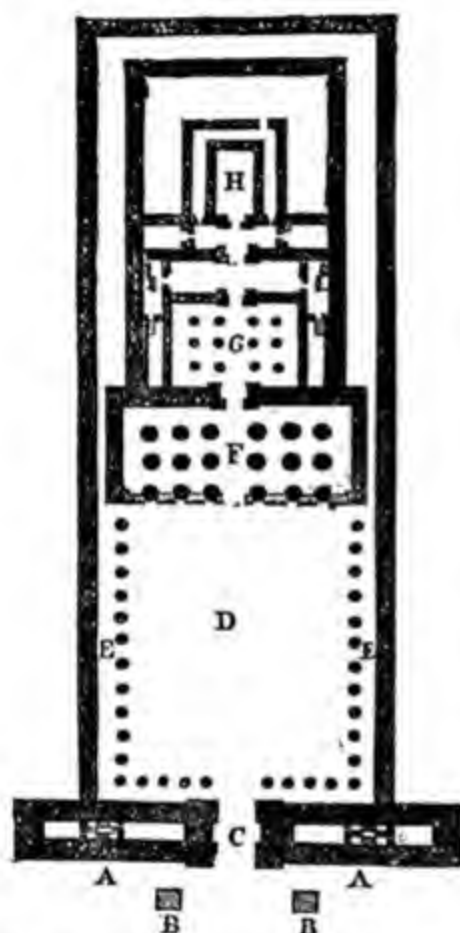
Section of Granite-block roofed Chamber in the Pyramid of Cheops.

In an æsthetic point of view, these buildings occupy an inferior rank. The impression which they make is to be ascribed to their size and striking simplicity as well as to the associations which fancy may link with them.

§ 26. The principal elements in the designs of the Temples (Fig. 22) consist, firstly, of the temple building itself, with its

vestibules and side-buildings which served as dwelling-places for the priests; secondly, of a closed court which surrounded the actual temple; and, thirdly, of a stupendous entrance-gate of peculiar shape, called the Pylon.

Fig. 22.



Temple of Edfu. *A* Pylon. *B* Obelisks.
C Entrance. *D* Temple-Court. *E* Porticus.
F Pronaos (Court with colonnades).
G Naos. *H* Sanctuary.

In some instances a second fore-court occurred, before which was likewise a pylon, and occasionally even a third pylon was found.

The avenues to these pylons, which are in many instances 6,000 ft. long, lead through rows (dromos) of colossal sphinxes or rams (Fig. 23), and through various other smaller entrance-gates, resembling the pylon in form.

§ 27. The pylon (Figs. 24 and 25), the main entrance-gate, which conducts into the front-court, overlooks all the other gates and the whole structure of the temple. The pylon consists of three parts—namely, of two flanking towers, and the gateway thus formed between them.

This gateway again is flanked by perpendicular jambs adorned with sculptures, and covered by an entablature consisting of a fillet and a large cavetto. A symbolic carving (Fig. 26) is introduced

into this entablature and repeated over every doorway in the interior of the temple, namely an egg or globe with a wing at each side. The two flanking towers of the pylons have each an oblong base, the longer side being turned towards the front, and the shorter towards the inside of the gateway (compare Fig. 22). They are, to a certain extent, pyramidal in shape, inasmuch as the external surfaces slope slightly inwards (see profile of the Pylon, Fig. 25),

and consist only of a flat, wall-like surface, adorned throughout with coloured sculpture and girt with astragals, and of an entablature

Fig. 23.



Sphinx at Thebes.

formed of a fillet and deeply-projecting cavetto. The roof of these constructions is flat.

Fig. 24.



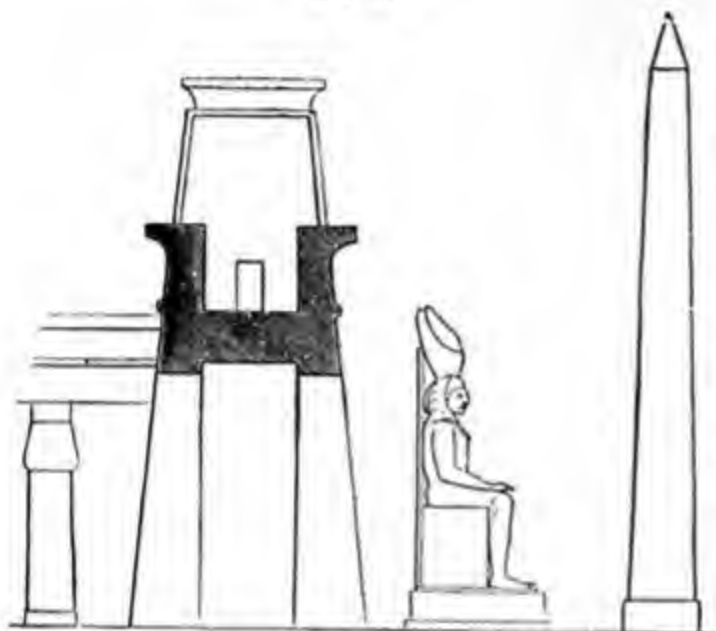
Pylon at the Palace at Luxor.

They contain several dark rooms, whose object is uncertain. The chief aim of the pylons seems to have been to give an imposing appearance to the entrance. To this end colossal statues and obelisks were introduced in front of the pylons (see Fig. 25). Obelisks are square diminishing monumental columns, capped with a pyramidal point. On festive occasions flagstaffs were hoisted from the pylons. That these pylons were intended merely for gates, and not for buildings with any independent purpose, may be assumed from the small proportion which their depth bears to their length. They were

generally constructed of colossal dimensions. For instance, the first pylon at the Palace of Karnak is 370 ft. long by 48 ft. deep.

On the pylon abuts the fore-court with corridors (see Fig. 22, D) with rows of columns (E) either at the two side walls, or on all the

Fig. 25.



Profile of Pylon, Fig. 22, with Colossal Statue and Obelisk.

four sides; or sometimes only on three. On these columns rest cross-pieces of stone, which form an architrave and support the roof-slabs of the area. They thus form a kind of entablature, which, as in the case of the pylons, is surrounded by an astragal and shaped like a cornice (Fig. 27).

The space between the columns is generally about one and a half time, rarely double, the diameter of the lower part of the shafts.

Fig. 26.



Entablature over Door-way at the Great Temple at Philæ.

§ 28. Passing through the colonnade the temple (Fig. 28) is reached; in no instance at once the inner sanctuary, but other initiatory spaces, which invariably occur: and, firstly, an entrance-hall, "the polystyle hall" (Fig. 22, F) is entered, the roof of which is supported by many columns, and then follow two or more other entrance-chambers, which all, however, appear more as belong-

ing to the structure than the outer area does; for temples of tolerable size are met with in which the outer areas are wanting, but not a single one in which the columnar entrance-halls do not occur. The columns form three or four rows, the rows which face the court being closed in by walls of about half the height of the columns, and with the upper part crowned in the manner shown by Fig. 29. The columns of the middle rows are higher than the rest, so that light may enter through the side-openings between the higher roof of the central nave and the lower rows.

Fig. 27.



Cornice — Entablature at the Great Temple at Philæ.

To the many-pillared entrance-chamber succeeds another, which is always much narrower, but sometimes equally rich in columns (G).

Fig. 28.



Great Temple at the Island of Philæ.

Then one or two vestibules without columns are reached, and then finally the innermost sanctuary, which is only accessible by one entrance-door (H). This sanctuary is always small and totally dark, and very rarely contains the statue of a god. Adjoining are several chambers, probably intended for the preservation of sacred

vessels and as residences for the officiating priests. The whole of this hinder portion is surrounded by a continuous wall. This

Fig. 29.



Moulding of the Walls between the Columns at the Great Temple at Philæ.



Profile of the same.

arrangement of the larger temples may be considered as the prevalent type, and amongst others the Temple of Edfu (Fig. 22) offers a model of this plan.

Fig. 31 affords another example. The section, Fig. 30, which belongs to the same, serves to illustrate the proportionate height of the various parts of the interior of a temple of this description.

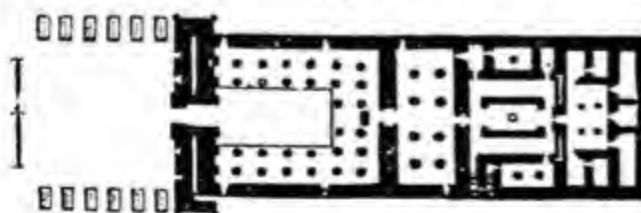
Fig. 30.



Section of the Temple of Chensu at Karnak.

It is there pointed out how, both through elevation of the floor and depression of the roof, the chambers decrease regularly in height as they proceed from the front to the back.

Fig. 31.



Ground-Plan of the Temple of Chensu at Karnak.

§ 29. The serious, solemn, and awe-inspiring effect which the general arrangement of the temple produces is maintained by the smaller details, while the slanting form of the outer walls

gives the temple an appearance of solidity and isolation. On this account, and especially owing to its simple unbroken lines, the exterior,

Fig. 32. -



Back View of the Temple at Philae.

although monotonous and heavy, is still imposing. The chief peculiarity in the construction of these buildings is that they produce the effect of being composed of an agglomeration of separate parts, which resemble one another, but become smaller and smaller towards the rear of the structure (Fig. 32).

The walls of such a temple are covered with rows of sculptures painted in bright colours, and which are separated by bands, the lower rows on high walls being of greater breadth than the upper. The interior (Fig. 33) has a richer appearance, chiefly owing to the use of columns of a round cylindrical shape. These are, moreover, of the most varied form, and without exception represent objects drawn from the vegetable world.

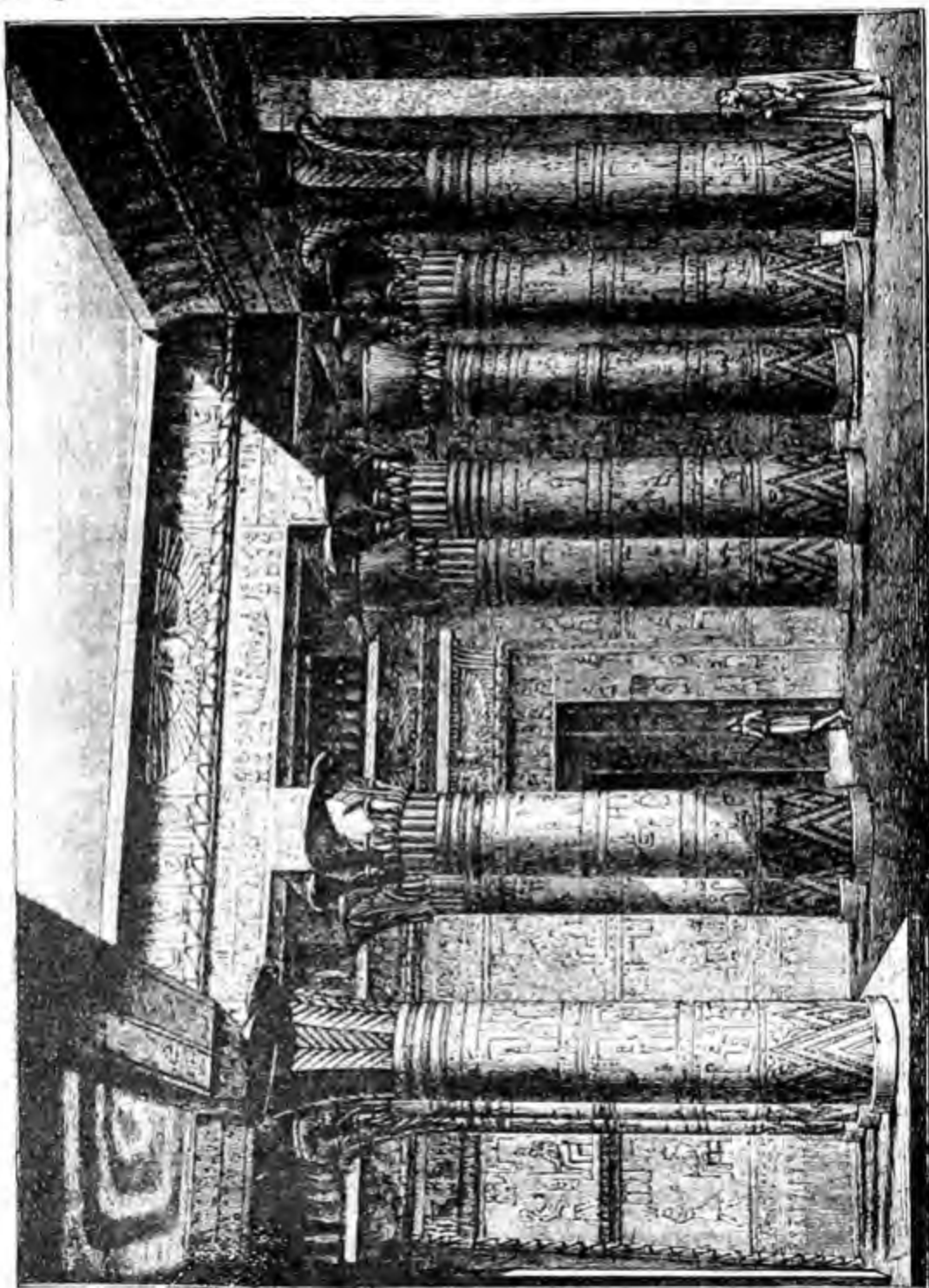
§ 30. The shaft is sometimes thick and sometimes slender, but never diminishing. Its height varies from 3 to $4\frac{1}{2}$ times the diameter of the base, or, in some instances, even 5 to $5\frac{1}{2}$ times. This shaft is occasionally smooth, and only ornamented above and below, but it is generally marked off by horizontal lines into divisions, which are covered with sculptures and hieroglyphics (Fig. 34). It often consists of convex bands placed vertically, which resemble a bundle of thick reeds, and which in their turn are surrounded by several horizontal belts (Fig. 35).

The shaft almost invariably rests on a circular plinth as a base, which projects more or less in different instances.

§ 31. The capitals of the columns display an immense variety.

The most beautiful have a crater-like form, and appear like the projecting bell of a flower, with leaves standing out from the surface

Fig. 33.



Interior of the Temple at Philae.

(Fig. 37). At the lower part of the capital there frequently occurs an ornament of diminishing triangles, resembling the sheath from

which the stalk of a plant springs (Fig. 36). The same ornament often occurs at the base of the shaft, and seems to a certain extent borrowed from the shape of the lower portion of the papyrus plant (Fig. 34). Other capitals imitate an unopened bud or seed-pod, as in Fig. 35. In both cases the lotus, which is the sacred plant, is typified. In other instances (though these may perhaps belong to a later period) the pillars are imitations of a palm tree, and have a smooth slender shaft, a neck-moulding of several rings, and then, without any intermediate architectural division, a capital formed of the graceful leaves of the palm (Fig. 38). In some temples the pillars have, in lieu of capital, the face of a goddess, probably of Isis, with a drooping sacerdotal hood, and supporting a temple on the head (Fig. 39). This face is repeated on four sides of the circular shaft.

§ 32. In Egyptian architecture the structures are of stone. The coverings of the apertures as well as of the courts was effected by immense blocks of stone laid horizontally, to which form of construction the wealth of the country in durable kinds of stone conduced. An admirable skill was called forth and developed through this employment of stone, which was for the most part of a kind laborious to work. This style of construction, operating as it did on the form of the structures, must have exercised an influence on Egyptian architecture generally, inasmuch as short, bulky, closely-ranged columns were requisite for the support of

Fig. 34.

Pillar at the Temple
at Edfu.

Fig. 35.

Pillar of the Palace
at Luxor.

Fig. 36.

Ornament on the lower part
of the Capitals in the
Temple at Edfu.

the ponderous blocks of stone which formed the architraves and roof-beams.

Fig. 37.



Capital in the Temple at Edfu.

Fig. 39.



Capital in the Temple at Denderah.

Fig. 38.



Capital in the Temple at Edfu.

The blocks of stone which form the architraves do not rest immediately on the capital, but on a quadrangular block of the breadth of the diameter of the upper part of the column. The columns and capitals are in general not uniform, but recur in symmetrical succession.

Fig. 40.



Profile of a Colossal Statue on a Pier at the Palace at Luxor.

Fig. 41.



Front View of Colossal Statue.

Their unity is preserved by the harmony of the lines, for the horizontal divisions in the decorations of the shaft, as well as the upper and lower lines of the neck and the capital, have always a uniform height.

§ 33. Instead of columns, square piers are not unfrequently introduced in the tombs. In structural buildings they only occur in connection with colossal statues; in which case the pier supports the roof, and the statue, while connected with the pier at the back, has its head free, without supporting anything (Figs. 40 and 41).

§ 34. These human figures on the square piers are three or four times the size of life, but are 'perfectly uniform in height, features, and attitude; they are invariably in a standing posture, the head is decked with the lofty priestly tiara, while the only covering of the body is the Egyptian apron round the loins. In the right hand is the mystic token of the Nile-key, in the form of a cross, with a handle at the upper part; both arms are crossed over the breast or hang close by the side; the feet are either parallel and close to one another, or with one slightly projecting; and the arched breast is rendered prominent by the upright position.

§ 35. To the multiplicity of form is added the variation of bright colouring. The stone is never suffered to retain its natural tint either inside or outside the building. Everywhere it is covered with sculptures and ornaments, plastered with stucco, and painted in bright colours, which have lasted unchanged to the present day. These sculptures consist mostly of rows of sitting or standing profile figures in similar or nearly similar positions, either following each other as in a procession, or fronting each other in the attitude of worship or consecration. Groups of this sort are repeated symmetrically on the walls on both sides, and have a direction towards, or at any rate a reference to, the centre. They are generally of smaller di-

Fig. 42.



Mural Frieze-like Decoration from the Temple of Esneh.

mensions in the interior, so that the walls or columns of the same chamber contain several rows of such representations. Between and over them are often found ornamented bands like friezes (Figs. 42 and 43), and at the bottom of the walls, as in the case of the columns, are introduced more decorations, representing lotus-plants (Fig. 44).

Architectural unity was not essentially disturbed by the confusion of the sculptures, although the Egyptians laid on their colours in bald and heavy tints, without a knowledge of blending, toning, or shading.

§ 36. Another element in Egyptian monuments which is worthy of study is the hieroglyphics (Fig. 43), which mean, literally,

Fig. 43.



Mural Decoration with Hieroglyphics from the Great Temple at Philæ.

sacred sculptures, and that not only because the condition and direction of architecture are thence to be learnt, but because also of the historical disclosures which they bring about. Modern research has succeeded in deciphering many of them, and also in gaining a satisfactory insight into the whole graphic system of the Egyptians. These hieroglyphic writings are of two kinds. The first is when single signs express entire ideas. In the other kind, which was much more frequently used, the signs express only single letters, or rather sounds, namely, always the initial letter with which the designated object began. This sort of hieroglyphic is called the

phonetic.

Both kinds are intermingled in the inscriptions, but, in order that no ambiguity of interpretation may be possible, the signs which served as conceptions were not used as phonetic hieroglyphics.

Not only natural objects were chosen as hieroglyphic signs, but geometrical figures, such as squares, circles, ovals and lines of various kinds, both simple and double, also often occur. Articles, pronouns and prepositions, as well as gender and number, were principally expressed by these geometrical signs. No settled law was followed in the distribution of hieroglyphic writing. Whether it is to be read from right to left, or *vice versa*, must be gathered from the direction in which the heads of the animals therein represented are turned. The vowels were omitted for the sake of brevity. Besides hieroglyphics, the Egyptians possessed a form of writing which was employed by the priests, as also a current popular form; neither of these, however, need be taken into consideration here, since hieroglyphics were applied to architecture. As regards the meaning of the inscriptions, the expectation of important disclosures and discoveries was disappointed, for they are generally only records of a religious ritual; in the case of the mummies they are always funeral prayers, and in the case of the monuments, eulogies and forms of consecration of the prince by whose order they were constructed.

§ 37. Besides the temples the designs of which have already been described, another form of temple exists which are called Typhons.

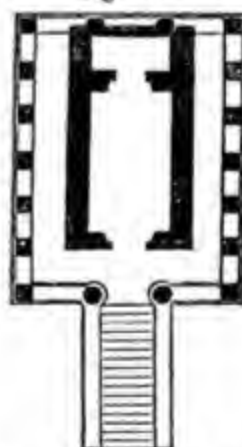
They consist of a simple house in the shape of an oblong square, which has the entrance on the shorter side, and two or three consecutive chambers in the interior; whilst a colonnade surrounds all the four sides of the exterior (Fig. 45). At the corners, however, of this colonnade, columns did not occur, but only simple piers of masonry

Fig. 44.



Ornament at the foot of the wall from the Great Temple at Philæ.

Fig. 45.



Small Temple in the Island of Elephantine.

without a capital or entablature, so that the columns, which are thus shut in by the wall-work, do not form an uninterrupted colonnade. The space between the columns on the narrow side is considerably smaller than that on the longer. There are in consequence only two columns between the masonry piers on the narrow side, whilst in the longer sides generally six, but sometimes as many as nine, columns are introduced.

Fig. 46.



Façade of the Little Temple at Elephantine.

The whole temple stands on a perpendicular substructure, the outline of which is only broken in the middle of the smaller front-side by a flight of steps which leads up to the entrance into the building (Fig. 46). The columns are besides throughout connected with a wall about half the height of the shaft (as in the case of the polystyle entrance-halls), and a break in the continuity of the same only occurs in the interval between the middle columns of the front of the edifice where a door, corresponding to the flight of steps, takes the place of this wall.

These temples possess in every respect a purely Egyptian form. The external walls are not, however, slanting, but entirely perpendicular, as was necessitated by the mural connection of the pillars.

It is nevertheless probable that this kind of temple is of later date, and they are only found as subsidiary-buildings in connection with the larger temples.

§ 38. The arrangement of the excavated structures corresponds with that of the temples.

In most rock-temples a court, which is sometimes open and sometimes hewn out of the rock, or a covered vestibule forms the entrance, which opens into an entrance-hall, with smaller chambers beyond, in which pillars or columns are introduced according to the exigencies of the case. The ground-floor (Fig. 48) and the section (Fig. 49) of the rock-temple at Ipsamboul illustrate this construction. In the latter

Fig. 47.

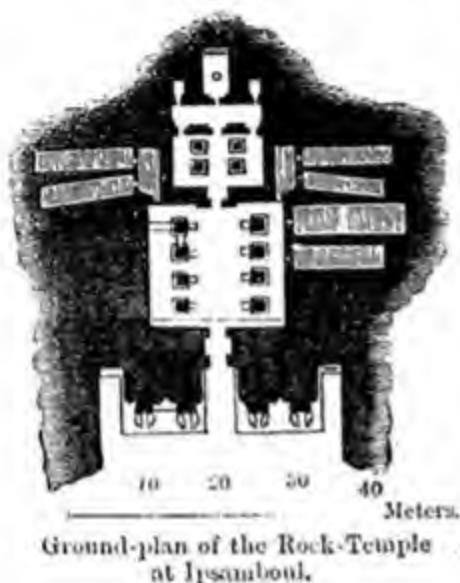


Entrance-hall of the Rock-Temple at Ipsamboul.

figure is seen one of the four sitting colossal statues which are hewn out of the rock in front of the entrance, and which attain a height of $68\frac{1}{2}$ feet. Fig. 47 gives a perspective view of the entrance-hall, in which are seen eight standing colossal statues 33 feet high, supported by square piers. Fig. 50 gives a view of the entrance with the colossal statues. The larger rock-tombs have a similar arrangement: the vestibule is generally open to the air, then more or less halls and chambers, and finally narrow passages issuing from them, in which are placed the mummy-cases in well-like recesses.

§ 39. In essential particulars the palaces are adorned and arranged in the same way as the temples, with the exception that in their case the successive steps to the inner sanctuary are not so clearly marked, and that the whole space with its entrance-courts and many-pillared halls is surrounded by a continuous wall. Fig.

Fig. 48.

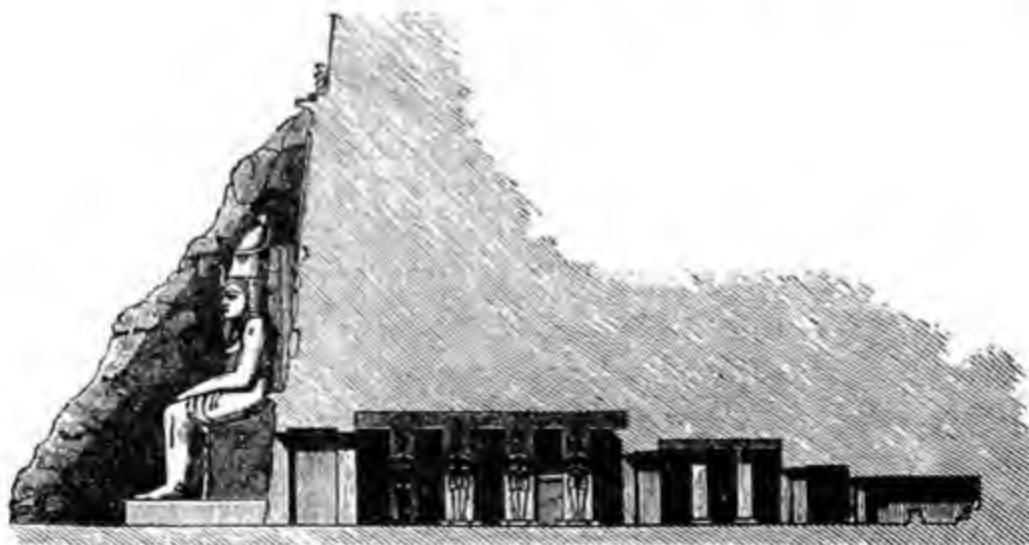


Ground-plan of the Rock-Temple at Ipsamboul.

51 may perhaps serve to give an idea of the design of these palaces, which were executed with the utmost magnificence.

An avenue of crio-sphinxes, 810 feet long, and in continuation of the same a road, which passes through four pylons erected at various intervals, leads in an oblique direction to the side entrance of the palace (Fig. 51 X). On the contrary the main entrance leads through a colossal pylon to a court (A) surrounded by colonnades, and which is 332 feet long by 269 feet broad, and intersected at

Fig. 49.



Section of the Rock-Temple at Ipsamboul.

one side by a temple let in obliquely by Rameses III.; while through a second pylon the magnificent pillared hall (B) is reached.

This hall is 170 feet long by 332 feet broad, and its roof is supported

Fig. 50.

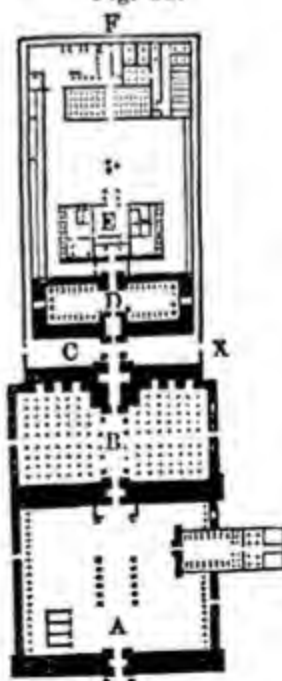


Entrance to the Rock-Temple at Ipsambul with Colossal Statues in front.

Fig. 51.

in the middle by 12 columns 75 feet high, and by 122 lesser columns, which are divided into seven rows.

Fig. 52 shows how the middle passage is made more imposing by this arrangement of elevating the columns in the middle, and how at the same time a means is contrived of lighting the whole hall by the raised side-lights. A pillarless court (C) leads from this hall to a fourth pylon. Between the two stand two enormous obelisks. The following chamber (D) is equally an open chamber surrounded with statues in connection with piers, and in it also two obelisks were erected. A smaller open court leads thence through other pylons to chambers (E) and the sanctuary, sur-



Ground-plan of the Palace at Karnak.

rounded by galleries and small columns; while at the extreme end of the whole construction at the end of the open space beyond the sanctuary is a small columnar temple (F).

Fig. 52.



Section of the Hall of the Palace of KATAT.

III.

WEST-ASIATIC ARCHITECTURE.

§ 40. WE possess but scanty information regarding the art of the ancient races of Western Asia, and the remains of their monuments which have been preserved to our own times are few and insignificant. Through the excavations and researches of quite recent times, however, an entirely new field has been opened out, which, although poor in architectural remains, properly so called, gives an interesting insight into the colossal constructions of Babylon and Nineveh, owing to the numerous sculptured representations which have been discovered, and the deciphering of inscriptions written in the cuneiform character.

a. BABYLONIAN (CHALDEAN) AND ASSYRIAN ARCHITECTURE.

§ 41. Babylonian buildings belong to an epoch previous to the year 1400 B.C, after which period their subsequent development was checked by the growth of the more powerful kingdom of Assyria. The most considerable architectural activity did not occur till the epoch of the monuments of Nebuchadnezzar, viz. about 600 B.C. Both these Babylonian and Assyrian buildings were constructed of baked or unbaked bricks, which were not calculated to be durable; and this is the reason that we now possess no well-preserved monuments, but only rubbish-mounds of old building materials, which still, however, by their vast extent bear witness to the compass and greatness of the towns of Nineveh, in the neighbourhood of Mosul, and of Babylon, near the modern Bagdad; at which places, according to the description of ancient Greek writers and quite recent investigation, structures must have been erected on a gigantic scale.

The latest excavations of the Assyrian ruins of Nimroud, Khor-

sabad, and Koyundschiek, near Mosul, and which are for the most part ascribed to the old town of Nineveh, have led to the conclusion that the royal palaces, which united formed a kind of citadel, as well as the temples, were erected on artificially raised mounds or terraces. These terraces were not, however, constructed of embankments of earth, but of clay-bricks regularly dried in the sun, while natural elevations of the soil were taken advantage of to form these super-structural ramparts. In this way platforms of from 30 to 40 feet high were reared, on which the real building was subsequently erected. In the buildings themselves unburnt bricks were in a great measure employed; the walls consequently have a thickness of from 5 to 15 feet. They were revêted both on the inside and the out with alabaster or limestone slabs, on which were engraved bas-reliefs and inscriptions in the cuneiform character (Fig. 53). In the

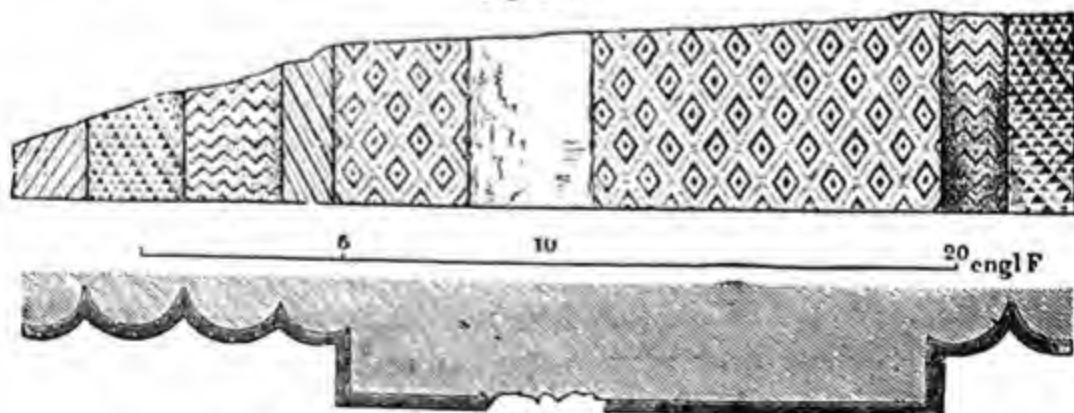
Fig. 53.



Cuneiform Writing.

exterior, free-stone was also employed for the lower parts of the coping. In the interior the walls consisted, above the line of the revêting slabs, which reached a height of from 9 to 12 feet, of richly-painted burnt or unburnt bricks, coated with stucco

Fig. 54.



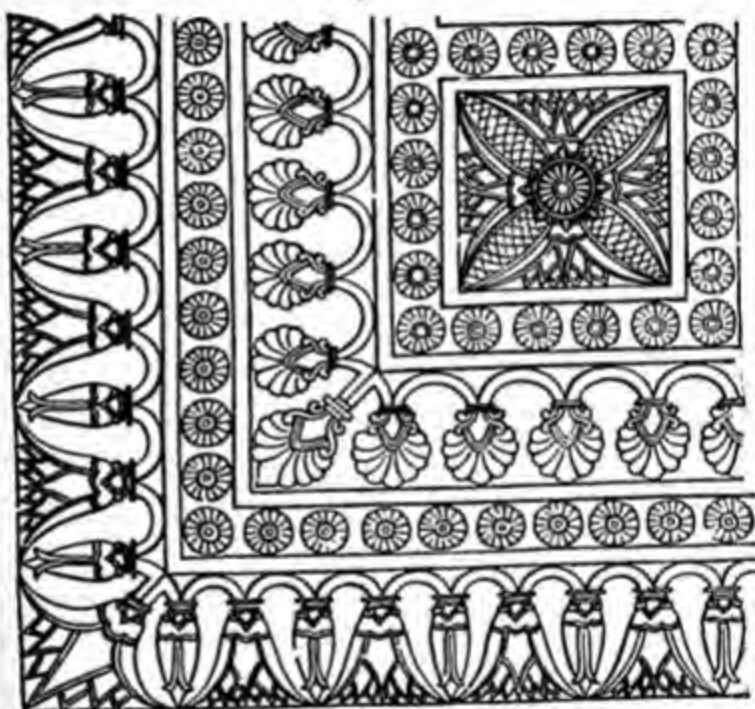
Wall-Mosaic from the Terrace Ruins at Workha.

painted with various kinds of ornamentation. In some instances the entire walls are covered with painted stucco, without any facing of slabs.

Another kind of mural casing, especially in external walls, was effected by driving conical terra-cotta studs about $3\frac{1}{2}$ inches long into the surface of the wall on which convex mouldings had been formed. The pointed ends of these studs, which were of various colours, white, red, black, &c., were imbedded in clay which had been worked up with chaff, and the broader bases of the cones were made to form simple ornamental patterns of alternating colours on the exterior, as is shown in Fig. 54.

§ 42. The excavations at Nineveh, although of great importance for the attainment of a knowledge of the design of Assyrian buildings and the condition of art, have afforded no definite information regarding the architectural appearance of their structures as a mass. We are able to determine anything definite about one branch only, and that is the decorative. This we are enabled to do by the many specimens which have been discovered. The most interesting point under this head is a certain accordance with the Grecian style of decoration, as is shown by Figs. 55 and 56. The latter

Fig. 55.



Part of a Pavement-slab in the North Palace at Koyundschick.

Fig. 56.



Guilloche Ornament painted on Burnt Clay, from the Ruins of Nineveh.

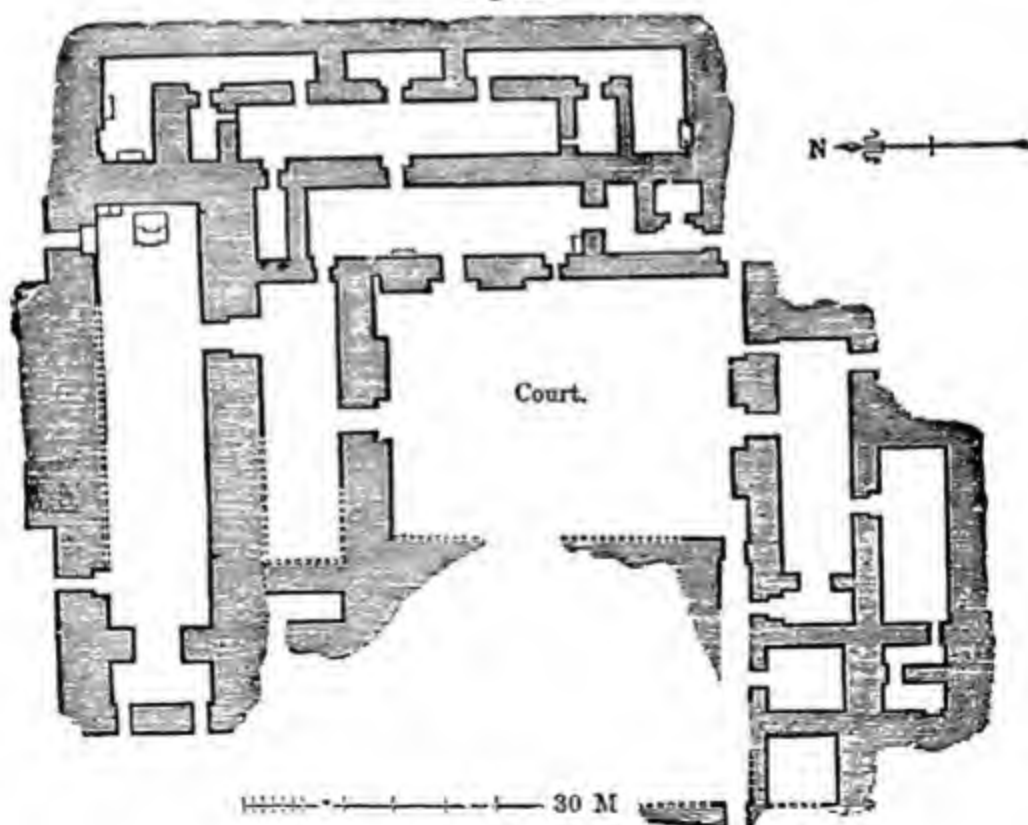
of these represents an ornament which occurs very frequently on vessels and drapery, but which is also used in mural decorations, and

Fig. 57.



Sculptured Griffin from the Sculptures in the Ruins of Nineveh.

Fig. 58.



Ground-plan of the north-west Palace of Nimroud.

by comparing Figs. 160 and 163, it will be observed what a marked affinity exists between the Grecian and Assyrian patterns. Since, however, it is not the object of this volume to enter into any critical investigations, but only to characterise and point out peculiarities of style, and only to admit artistic assertions when they are definitely allowed and established, it must be left an open question whether in these productions of Assyria and West-Asia generally, a germ is not visible of many forms which the Greeks, with their keen eye for the beautiful, subsequently borrowed, and expanded in accordance with their own more advanced rules of art; or whether on the other hand it is not more probable that these forms had their original home in Greece, and from thence made their entrance into Assyria. The former of these views is supported by a comparison of Fig. 57 with a Grecian griffin (*see* Grecian Architecture, Fig. 85), and by the fact that these forms were features of Assyrian buildings before the Persian conquest, *i.e.* before the sixth century B.C.

The accompanying drawings are only intended, in the total absence of all authentic records of the main architectural principles, to give at least an insight into the style of ornamentation, as far as it is possible to convey any idea from the few specimens which have as yet been discovered.

§ 43. One peculiarity is visible in all Assyrian buildings, namely, that all the chambers are very narrow in proportion to their length. Nothing definite is known of the manner of constructing the roof, and views on this subject are much at variance. It may, however, be accepted as established that the chambers were in general lighted by windows, which were inserted in the walls either high up or immediately under the roof, and that only large halls received their light from above through openings in the roof. The dwelling-houses which are represented in the sculptures, show at least traces of these windows let into the upper part of the walls.

§ 44. Colossal winged-bulls or lions with human heads form the main entrance into the halls, where battles, victories, triumphal entries, hunting scenes, and religious ceremonies and processions were engraved on the slabs of the casing, and painted in the most brilliant colours. Over these sculptures were painted other royal acts of the king surrounded by his eunuchs and warriors, and these

representations were in their turn surrounded by an ornamental border, in which winged-bulls and monstrous beasts, as well as the sacred tree, principally figured (Fig. 60).

Fig. 59.



Winged-Bull from Nimroud.

At the top of the walls the roof was probably constructed of wooden beams, divided into coffers by wainscoting, which were painted with flowers or animals, or inlaid with ivory. Graceful

Fig. 60.



Sculptured Ornamental Border from the Ruins of Nineveh.

borders and corner-pieces surrounded each division. The brilliancy of the chambers was increased by employing rare woods and coatings of metals, especially gilding.

All the buildings that have hitherto been discovered in Assyria have precisely the same character, so that in all probability the

palaces and temples were united in one building: for the deeds of the king and nation are therein associated with the symbols of religion and the statues of the gods. It may be accepted as a general principle that it was not the temple, or the building destined for worship, which formed in Babylonian, Assyrian, and the Persian Architecture which is to be described hereafter, the most important and distinctive element of the style, as it did in the case of other cultivated races; but rather that it was the palace of their despots which enjoyed a paramount importance in the minds of those races. The building destined for worship was only to be distinguished by a pyramidal terrace-like substructure, whilst the structure of the temple itself was by no means in accordance with the commanding position which raised it above the whole surrounding district: raised palaces were also erected on terrace-shaped substructures. One especially distinctive mark, however, of temple-terraces was this, that they were covered with glazed tiles in such a way that each platform had a distinct colour.

§ 45. No trace of the column is to be found in Assyrian ruins. That columns were not, however, unknown to the Assyrians is proved by two which are represented in the older sculptures of Nineveh, as supporting a kind of pavilion.

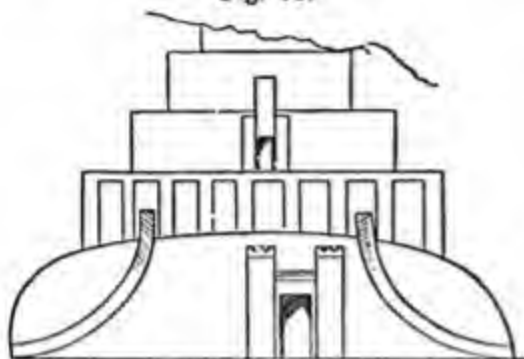
The total absence of shafts and capitals in Assyrian ruins, as well as the insignificant breadth of the chambers in proportion to the length leads to the conclusion that independent columns were not used as main supports. On the supposition of a wooden roof to the chambers this might, it is true, have been supported by wooden posts, but such a presumption is difficult to reconcile with the otherwise massive character of the structure.

§ 46. One of the Babylonian buildings, the Temple of Baal or Belus, which is known in the Bible under the name of the Tower of Babel, was a pyramidal structure consisting of eight storeys, and was 600 feet broad at each side of the base, and also 600 feet high. In the top storey was a large temple. A staircase winding round the eight storeys led to the temple and also to the interior of the building.

The appearance of one of these terraced pyramidal structures is shown by a Relief from Koyundschick (Fig. 61), which unfortunately has not been preserved complete. It there is represented as

rising on a mound-shaped substructure, on which two paths are marked out, and in which an entrance-gate is introduced, which

Fig. 61.



Terrace-Pyramid.
Relief from Koyundschick.

reminds one in miniature of the gigantic Egyptian temple-gates or pylons. On this substructure rests a terrace supported by buttresses, and on that again a second with an entrance-gate, and then a third with a quite narrow entrance, and lastly a fourth terrace, whose termination the delineation leaves doubtful.

§ 47. The other monuments, known to us, date from the later times of the Chaldeo-Babylonian kingdom, the most flourishing period of which was during the reign of Nebuchadnezzar, about 600 B.C. The celebrated hanging gardens of Semiramis belong to this epoch. Probably these were terraces disposed in stages one above the other, so that each formed a garden-plateau.

No clue is left amidst the numerous masses of ruins, by which the style of these structures can be determined. Still, however, the bas-reliefs which have been brought to light present much that is worthy of note. Figs. 62, 63, and 64, amongst others, bring out prominently the similarity of many details with Grecian art. Fig. 62, represent-

Fig. 62.



Pillar of a Table in an
Assyrian Relief.

Fig. 63.



Capitals and Base of a Column in a
Bas-relief from Koyundschick.

Fig. 64.



Fig. 65.



Fig. 66.



Pillar on a Lion's
back.

ing the pillar of a table, bears a strong resemblance to an Ionic capital as displayed in Asia Minor. Other reliefs portray small façades of temples with capitals like Figs. 63 and 64, and of these Fig. 63 shows an affinity, although it be a remote one, with the Corinthian capital. A base is shown in Fig. 65. In the fragment of a relief from Koyundschick columns occur which rest on a cushion-shaped base on a lion's back, just as is the case in the doorways of Gothic churches (Fig. 66).

It may finally be mentioned as a remarkable peculiarity that, totally contrary to the usual belief that the semicircular arch was applied by the Etruscans and subsequently by the Romans, arches of this description have been found represented in the reliefs of the ruins of Nimroud, and that it thence also appears that the pointed arch was thus early employed both for niches and doors. This may be gathered not only from reliefs in which such constructions occur, but also from still existing arches of both descriptions applied to gateways and vaulted drains, which have been discovered, although the dimensions of the same are but small. Although the conclusion cannot positively be deduced that broader spaces were also vaulted over, still it thence appears far from improbable that chambers may have had arched roofs.

b. PHœNICIAN AND ISRAELITISH ARCHITECTURE.

§ 48. Whilst at best heaps of ruins alone bear witness to the existence of Babylonian buildings, the fabrics of the Phœnicians and of the Jews have disappeared without leaving any traces. With a view, however, of rendering the present work as complete as possible, mention must be made of those of their considerable buildings of which we possess a knowledge; so that, as far as may be, a conception may be formed of the architecture of those remarkable nations, which have exercised so important an influence on European civilization. Of the Phœnicians we only know in general terms that their cities were splendid and magnificent, as also were their colonies of Carthage and Gades, of which equally no remains exist; and that wood and metals, especially gold, were employed in covering the internal walls, and that brass was used for columns.

§ 49. Something at least of Architecture amongst the Jews may be gathered from the Old Testament: and it may have had much affinity with that of the Phœnicians. As early, however, as the Exodus from the land of Egypt, 1500 B.C., a peculiar architectural development may be traced, which is exemplified by the description of the Tabernacle, which was a movable temple-structure shaped like a tent. Since the people were continually wandering in the wilderness, this Tabernacle can have had no permanently structural character, but was composed of wooden walls covered with gold plates. Hangings formed the roof, and divided off the Holy Place, and the richly adorned Ark of the Covenant. The Court of the Tabernacle was surrounded with hangings and brazen pillars.

§ 50. Solomon's Temple was built at Jerusalem, 1000 B.C., after the pattern of the Tabernacle. This temple was destroyed 420 years later, at the time of the conquest of Jerusalem by Nebuchadnezzar, and subsequently, on the return from captivity under Cyrus and Darius, was rebuilt by the Jews from about 536 to 515 B.C., in probably the same style as the former temple.

Herod the Great had this temple pulled down, and in B.C. 20 caused a new and magnificent temple to be erected, which, in A.D. 73, at the time of the destruction of Jerusalem by Titus, experienced the same fate as the former one. Herod's building was, it is true, in accordance with the main plan of the former temple, but was executed in the then prevailing Grecian style.

§ 51. Regarding Solomon's Temple we know that it was of small size, that the material was a combination of stone and wood, and that the fabric rested on strong foundation walls of blocks of stone. The building had two outer courts, the exterior one for the people, and the interior, which lay somewhat higher, for the priests. In the court were dwelling-places for the Levites and door-keepers. The actual temple consisted of the outer hall, or Holy Place, and of the Holy of Holies. On both sides of the building, and also at the back, was a side building, which was a third lower than the main building, and contained chambers disposed in three stories one over the other. The walls were of stone, but the interior was entirely covered with lining of cedar-wood. Beams of cedar formed the roof, and beams

of cypress the floor. All this woodwork was adorned with carving at the doors and windows; the devices represented palms, cherubim, and coloquints, and were overlaid with gold. In the Holy Place stood the altar of burnt incense, the table for shewbread, and five golden seven-branched candlesticks. At the upper part were let in lattice-shaped windows, which probably answered the purpose of carrying off the smoke of the incense. A wall of cedar and hangings divided this place from the Holy of Holies, in which stood the wooden Ark of the Covenant, overlaid with gold both inside and outside. At the side of it were two immense cherubim, carved from wild olive wood, and also overlaid with gold. No reliable details can be given of the exterior. The actual temple probably rose higher than the courts and side buildings. No columns surrounded the temple. At the entrance of the courts, however, stood the two celebrated pillars, Jachin, *i.e.*, firm, and Boaz, strong; made of cast brass, and which probably possessed a symbolical meaning.

§ 52. Owing to the utter want of all representations nothing definite can be adduced regarding the style of this temple or of Jewish architecture generally. The sole relic of the temple which has endured till our days, consists of part of a foundation constructed of large blocks of stone in the Roman fashion, and it may consequently be attributed to the last temple, which was executed in the time of the supremacy of Rome, although, judging by comparison with similar stone foundations in Assyrian ruins, the date might be set down as a much earlier one.

That no employment of Egyptian models occurred, as many have believed, may be determined by the heterogeneous nature of the materials employed; and indeed the whole design of the temple gives no evidence of any direct connection with Egyptian architecture.

Egyptian architecture has essentially stone as its basis; and the heavy beams of stone required many supports of stone, *i.e.*, columns. On the other hand, the extensive beams of wood rendered columns unnecessary amongst the Jews. Then again, the universal employment of glittering metal and costly wood leads to the conclusion that amongst the Jews there was no prevalent æsthetic taste for noble forms, as was the case amongst the Egyptians, but that a luxurious love of

ostentatious display obtained amongst them, which was more in accordance with Phœnician than Egyptian art.

The Jewish tombs, which still exist around Jerusalem, are either sepulchres hewn in the rock with a chamber in front, or independent structures hewn out of the rock, as has been seen to have been already customary amongst the primitive Indian nations. The bodies were disposed in these sepulchres in the same way as one sees in the catacombs at Rome, either resting immediately on shelves of the rock in the surrounding walls, or stowed away in trough-like recesses, or in holes excavated in the depth of the rock of the size of the human contour. The sepulchres have a kind of façade, or merely a framework and setting for the stone which blocked up the entrance. Both in these caves and in the independent structures details borrowed from or akin to Grecian and Roman architecture are perceptible: for instance, Ionic columns and Doric triglyphs (*see* Grecian Architecture, Figs. 116, 117, and 118); it may therefore be taken for granted that they belong to the later period of the Jewish kingdom. The sarcophagi also, which have been discovered in the sepulchres, show a Roman or Grecian influence, as well as that of the established Phœnician style.

C.—MEDIAN AND PERSIAN ARCHITECTURE.

§ 53. At the overthrow of the Babylonian kingdom, at the end of the eighth century B.C., its culture and art passed into the hands of the Medes, and from them in turn to the Persians, when that people freed them from Median supremacy in the sixth century B.C.: it is therefore easily to be accounted for, if considerable conformity exists between Persian and Babylonian monuments, both as regards terrace-built structures and various other details.

Religion was not favourable to constructive art amongst the Persians. They worshipped Ormuzd as god of light and good, under the symbol of fire, as opposed to Ahriman, the god of darkness, and promoter of evil. They had consequently no images, and they had also no temples, because sacrifices were conducted in the open air: the essential element was therefore wanting for the rise and development of constructive art.

§ 54. In later times, however, when Egypt and the Greek colonies of Asia Minor were subjected to the Persians, we know that the Persian kings employed Egyptian and Grecian artists in building their palaces. The monuments which have been preserved to us show, however, a peculiar character in spite of every imitation of foreign architecture. Many of these structures belong, it is true, to the fourth century, the period of the Sassanides,* but considerable remains have been discovered dating from the times of the successors of Cyrus.

In the neighbourhood of Murghab are those of Pasargadæ, a town founded by Cyrus, where was the burying-place of the Persian kings. At this place is the tomb of Cyrus. Seven stages form a pyramidal building 40 feet high, 44 feet long, and 40 feet broad at the base, and constructed of enormous blocks of white marble. On the topmost surface is a little house with a gable-shaped roof of marble, in which formerly stood the golden coffin, surrounded by all kinds of costly vessels.

§ 55. The most important monuments of Persian art, besides the tombs of the later Persian kings, are the magnificent ruins of Chehil Minar (the forty pillars). They are remains of the great palaces of Persepolis, which were overthrown by Alexander the Great, and rise in terraces at the foot of Mount Rachmed; they are constructed of the blackish-grey marble of the mountain itself, and are 1400 feet long by 900 feet broad. According to the modern deciphering of the inscriptions, these palaces were built partly by Xerxes, and partly by Darius. A magnificent double staircase runs along the walls of the terrace (Fig. 67), and leads to a portal, on the entrance piers of which are hewn gigantic, fanciful animal forms, resembling the Assyrian; beyond which, colonnades and

* This was a dynasty founded by Artaxerxes in the third century B.C., whose power reached its highest point under Chosroes, surnamed Mischirvan—i.e., The Just—a contemporary of Justinian, and was only overthrown by the invasion of the Arabs. This Persian Architecture under the Sassanides appears to have been a mixture of the old Persian elements with Grecian. The semicircular arch over doors and windows as well as niches occurs, however, not unfrequently in buildings which probably belong to the later period of the Sassanides. An elliptic form of arch is, moreover, peculiar to buildings of the Sassanides period, the cross section of which resembles an egg placed on end.

another similar staircase conduct to the second terrace, on which are found the remains of large polystyle halls. Ruins of other

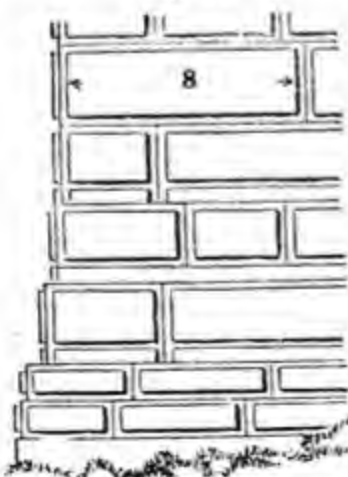
Fig. 67.



View of the Ruins of Persepolis.

considerable buildings are to be seen close by, but lying rather higher; these were richly adorned with bas-reliefs. On the third

Fig. 68.



Elevation of Platform at Pasargadæ.

Fig. 69.

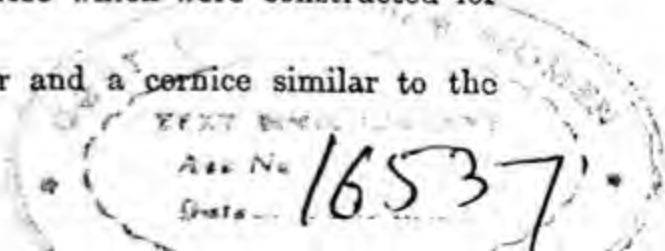
Capital and Entablature from the
Rock-Tomb of Darius

terrace are situated other buildings of various descriptions, as also colonnades, the walls of which are adorned with sculpture, and contain smaller chambers, which possibly constituted the habitable rooms of the palace. The original intention of other large ruins close at hand cannot be conjectured. The whole is surrounded by a wall which abuts on the rocks which lie behind.

§ 56. The workmanship of the white marble columns, and of the large squared stones which are joined without cement, shows a cultivated skill (Fig. 68). The walls are covered with sculptures and inscriptions in the Persian cuneiform character; those which have already been deciphered betoken the forms of consecration and titles of Darius and Xerxes. The columns in the ruins of Persepolis are circular and slender, and have capitals and bases. The capital generally consists of two half-horses or bulls, whose fore feet overlap the border of the shaft, and which are placed back to back (Fig. 69). Probably a beam was inserted between their necks, which served as a support for the real transverse roof-beams laid upon it. Other capitals are more compact (Figs. 70 and 71), where from the lower part, which is in the shape of a globular vessel, rises a slender cup, supporting a lofty member with double volutes or scrolls on the four sides, which correspond with those of the Grecian Ionic capitals (Fig. 72), but which are introduced not horizontally but perpendicularly. The base consists of fillets and a leaf-covered torus resting on a circular plinth.

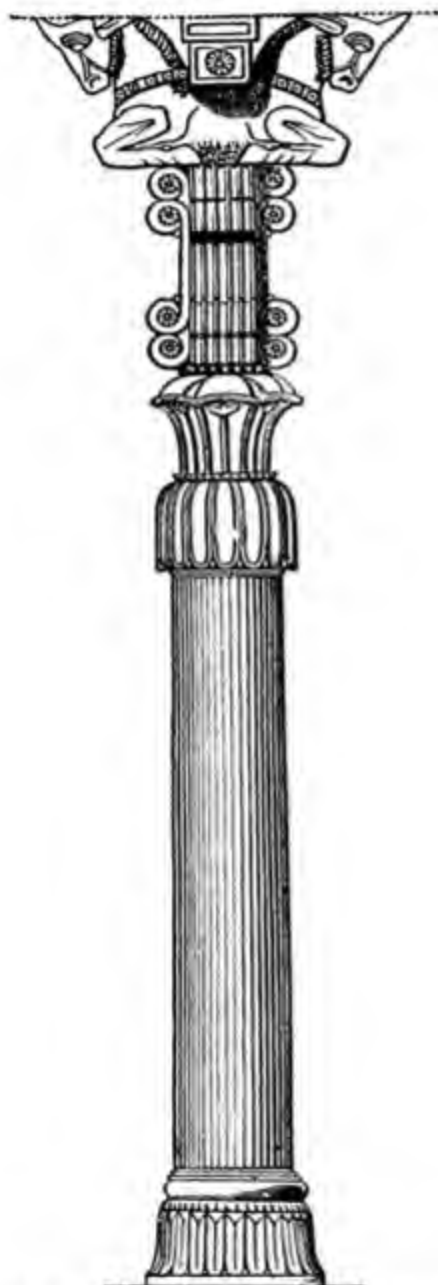
The columns have fine flutings and stand tolerably far apart from each other, from six to seven times the diameter, and consequently have a very light appearance. The entablature, of which nothing has been preserved, was probably of wood. To judge by the existing entablature in the tombs, a certain resemblance must have existed in this feature to the Grecian Ionic style. On an architrave consisting of three projecting stages, an upper beam rested on small blocks similar to the Ionic dentils, on which was a broad frieze with sculpture, such as a row of bulls or dogs. But in the more ornate and slender structure of the palaces at Persepolis, the entablatures were doubtless more elegant than those which were constructed for the tombs.

The doors have a square border and a cornice similar to the



Egyptian entablature, consisting of a cyma with a fascia over an astragal. With this exception, nothing at all is found that refers to

Fig. 70.



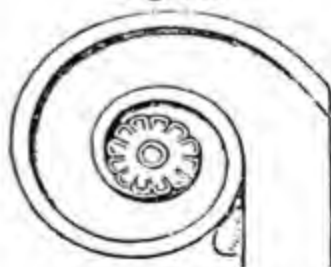
Capital (restored), from the Ruins of
Persepolis.

Fig. 71.



Capital from the Ruins of
Persepolis.

Fig. 72.



Volute of the Persian Column.

or coincides with Egyptian taste, although we know that after the subjugation of Egypt Cambyses caused architects to be summoned to

erect the royal palaces. It must, however, be understood that by this term only artisans are meant, to whom was entrusted the task of carrying out the works in the usual native style.

The development of a peculiar architectural style amongst the Persians is to be accepted as probable, but a style based upon foreign models introduced by them. Remains of other Persian monuments present traces of terrace-like designs with immense flights of steps, which are also, as we have seen, characteristic of Babylonian architecture. Though the Persians had adopted, beside these terraces, many other characteristics of Assyrian architecture, still the Persian style is essentially to be distinguished by its light porticos instead of the heavy massive walls, and by the simpler and more regular ground-plan of its buildings; but, above all, by the peculiar formation of its columns.

IV.

CHINESE ARCHITECTURE.

§ 57. AT the conclusion of that portion of this work which treats of the architectural styles of the ancient races of Asia, a short reference must be made to Chinese architecture.

Fig. 73.



Porcelain Tower at Nankin.

Indian art made its entrance into China with the worship of Buddha. But still diversities, corresponding to the different nationalities, were gradually introduced. Instead of the Indian dagoba there appears a tower-like construction of many storeys, growing smaller towards the top and with the stages distinctly marked, and covered with gay-coloured curved roofs to which bells were attached (Fig. 73).

These tower-like edifices, which were, for the most part, octagonal, were constructed, like the temples, for the purpose of religious worship.

The details of Chinese architecture show much affinity with late Indian. For example, in the upper part of the column, curved brackets were employed instead of a capital for the support of the architrave.

Chinese structures have nothing durable about them, for perishable wood forms an essential element in their construction, and they were more remarkable for their elegance and slender proportions

than for their vast dimensions. The roofs are especially characteristic, the most striking peculiarity being that they are always curved, and have figures on them in high relief, as well as at the corners, from

Fig. 74.



Chinese Pavilion.

Fig. 75.



Part of a Chinese Pavilion.

which hang bells, and that they are decorated with all kinds of embellishments, such as gilt dragons, and other fantastic carvings (Figs. 74, 75, and 76).

Fig. 76.



Entrance-gate to the Temple of Confucius at Shanghai.

The introduction of bright colours and of glittering porcelain and glazed tiles, forms a peculiar feature in Chinese architecture.

The architecture of the Chinese temples does not differ from that of the other buildings. They are, for the most part, small, and consist of one chamber surrounded by porticos (Fig. 77). The palaces are constructed in the same way as the temples, and are more remarkable for their size than their beauty.

Fig. 77.



Pavilion of the Great Temple at Canton.

The Chinese do not possess the art of arching large spaces, consequently numerous columns are introduced for the support of the ceilings and roofs; these are of wood, and sometimes carved and sometimes plain, but invariably painted.

It is essential to the complete character of a Chinese villa that its neighbourhood be adorned with a supplement of artificial rocks and woodland scenery, with water-courses with bridges, and with fountains, grottos, and fantastic rockeries.

Chinese architecture is as invariable as everything else in the Celestial Empire, and Chinese art, generally, is the same as it was many hundreds of years ago.

B.

CLASSICAL ARCHITECTURAL STYLES.

V.

GRECIAN ARCHITECTURE.

§ 58. WE are now entering on territory which lies nearer home, on the consideration of an architectural style which has spread itself not only over Greece, but over Asia and Africa and wherever Grecian civilization made its way.

The priests, among the Greeks, formed no exclusive class. Their mythological traditions were no priests' myths, but popular saga. Their poets had a great influence in the formation of their religious economy, which, though based on tradition, was susceptible of many deviations. It adapted and gave a free poetic meaning to the saga of other nations, which contained natural perceptions veiled in a mythic guise.

§ 59. A main element of Grecian character was moderation, and at the same time a bold love of freedom, in conjunction with an instinctive dread of everything impure and unholy, and a childlike reverence for the godlike, the holy, and the lawful. This love of proportion and beauty, together with a practical energetic feeling, forms one peculiar superiority of the Greeks. Feeling instinctively how far they ought to go, they did not need the restraints of priestly dogma. Whilst, therefore, the nations amongst whom religion was in every respect the immediate teacher, retained a trace of the incubus in all their intellectual transactions, the Grecian race moved onwards in natural easy grace.

FIRST PERIOD.—TILL THE TIME OF SOLON.

§ 60. The designation "Classical Art" is applied to Grecian

art, and includes Roman art, which was akin to and borrowed from it. Several stages have to be noticed in the development of Grecian art, the first of which coincides with the Trojan war. The taking of Troy is assigned to the year 1184 B.C. The tribe of the Pelasgi was at that time spread over Greece, who probably received their earliest civilization from immigrant foreigners, namely, from Danaus and Cecrops the Egyptians, and from Cadmus the Phœnician.

Even in those early times numerous colonies spread themselves from Greece over the islands of the Mediterranean and in Asia Minor and Italy, and ruins of buildings by these colonists in those countries still give evidence of their Pelasgic origin.

§ 61. Our earliest information regarding Grecian civilization and art is gained from the Homeric poems. We there see that the influence of the Egyptian colonists must either have been very insignificant or soon been merged in the Greek spirit, especially as regards ethics, form of government, and religious teaching and worship; whereas, on the other hand, the Greek character had not as yet pervaded architecture.

§ 62. Of the buildings of this period we know but little, and only remains of the circular walls round towns and palaces, which are known under the name Cyclopean, exist at the present day. These are found both in Greece itself and in many of the Greek colonies,

Fig. 78.



Cyclopean Wall.

Fig. 79.



The Lion's Gate at Mycenæ.

as in Italy and Sardinia. Such walls consist of gigantic polygonal blocks of stone, the corners of which fit accurately into one another

(Fig. 78). Other structures of this kind consist of regular blocks of equal height (Fig. 79). Both kinds are constructed entirely without mortar. The oldest of these monuments are formed of enormous unhewn boulders in their natural shape laid one on another, and the interstices filled up with smaller stones.

§ 63. Regarding the palaces, we gather from the Homeric description that they were surrounded by one of the walls mentioned above, and had an outer and an inner court, the latter of which was surrounded by porticos and chambers. This led to a large columnar hall for festive assemblies. The chambers for the family and women were behind. Costly stuffs lined the walls and served to enhance the splendour of these palaces.

§ 64. Peculiar vaulted buildings often existed in connection with the palaces for the preservation of valuables; the base of these treasure-houses is circular, and their covering of a dome shape; it does not, however, form an arch, but courses of stones are laid horizontally over one another

Fig. 80.



Section of the Treasure-House of Atreus at Mycenæ.

Fig. 81.



Fragment of Pillar from the Treasure-House of Atreus at Mycenæ.

in such a way that each course projects beyond the one below it, till the space at the highest course becomes so narrow that a single stone covers it. Of all those that have been preserved till the present day, the treasure-house of Atreus at Mycenæ is the most remarkable (Fig. 80). Ornamental fragments, which belonged to these buildings, lead to the conjecture that Mesopotamian art had some influence on the earliest Grecian buildings, as may be seen by a comparison of Fig. 81 with Fig. 54.

§ 65. In the further gradual development of Grecian culture, the severe Doric style which the Dorian race brought with them at their immigration, began to exercise a perceptible influence on architecture also. In consequence of this change, the old Asiatic gorgeousness was felt to be out of place, and was consequently abandoned. Although opinions may never coincide as to the prototype and origin of the Doric style, it is enough for us to know that at its first appearance it gained consideration and acceptance by its noble simplicity and its powerful and regular outlines.

§ 66. Of the monuments of this period only the ruins of a temple at Corinth are remaining; these agree in all essentials with the later development of the Doric style, and only differ in the proportions. The columns, for instance, are only four times their diameter in height. Other buildings, of which writers inform us, were the temples of Here and Olympia at Samos.

§ 67. The Ionic style was also probably first introduced during this period, inasmuch as it occurs at the beginning of the next period in buildings of importance. We may assume that at first, following the popular character and taste, the Dorians built only in the Doric, and the Ionians only in the Ionic style, but that subsequently both styles were not confined to the races to which they belonged, but that a free choice was left open to each.

SECOND PERIOD.—TO THE TIME OF PERICLES.

§ 68. The establishment and development of the Doric and Ionic orders, about the beginning of the sixth century before Christ, forms a second period of Grecian architecture, and was signalized by numerous buildings.

The most important were the temples of Olympic Zeus at Athens, and of Apollo at Delphi, both in the Doric style, and that of Diana at Ephesus, in the Ionic.

§ 69. This lively taste for works of art was fostered by the jealous rivalry of the republican communities in the erection of magnificent buildings, to procure means for raising which no effort was spared in the way of public and private contributions. The very artists contributed their share through their enthusiasm and the cultivation of the love of the beautiful amongst the people. The islands also, and the Ionian towns on the coast of Asia Minor, took part in similar efforts, as did also the Greek colonies in Lower Italy and Sicily, which were for the most part Dorian.

§ 70. It is in these countries that the earliest and most remarkable of the monuments of this period still exist. At Pæstum, which was founded 500 B.C., are to be found well-preserved remains of buildings which were erected soon after the foundation of the city. Sicily contains similar remains of Dorian temples; such are the temples at Syracuse, Selinus, Agrigentum and Egesta, all built in the same heavy, stunted style: their columns are not much slenderer than those at Pæstum ($4\frac{1}{2}$ diameters high). In Greece itself, the temple of Minerva at Ægina may be mentioned as fairly preserved: this was constructed directly after the expulsion of the Persians, 479 B.C.

No building of this period in the Ionic style has lasted till the present day.

THIRD PERIOD.—FROM PERICLES TO ALEXANDER THE GREAT.

§ 71. Grecian art attained its highest perfection after the Persian wars, a result which was in part brought about by the necessity of rebuilding the demolished city of Athens. Considerable buildings were undertaken as early as the times of Themistocles and Cimon; but the greatest architectural activity was developed under Pericles, who built the temple of Pallas on the Acropolis, and a gate, called the Propylæa, which led to the citadel.

Other places, too, as Eleusis, Rhamnos, Senion, and Thorikos, contained magnificent temples. But not temples alone, buildings for other public purposes, such as theatres, &c., were erected.

These buildings of the time of Pericles were still for the most part built in the Doric style, which had, however, assumed lighter and more graceful proportions, without at the same time losing its distinctive character of majesty.

The purest and noblest of these buildings was the Parthenon, which remains a model of this style for all ages, and its architects were Ictinus and Callicrates.

§ 72. Except in a temple on the Ilissus and in the interior of the Parthenon, the Ionic style is found in only one important building of this period, namely, the Erechtheium, which is a union of three temples, of which one was dedicated to the hero Erectheus, the second to Minerva Polias, as protectress of the city, whilst the third was sacred to the Nymph Pandrosus, one of the daughters of Cecrops. In the last-mentioned, caryatide figures were introduced instead of columns.

§ 73. Of other temples which were built after the time of Pericles, the following are especially noteworthy: the temple of Apollo at Bassæ, in Arcadia, similar to the Parthenon, and in which the Doric, Ionic, and Corinthian styles were alike introduced, and the temple of Minerva Alea at Tagea, the largest and most beautiful of the temples of the Peloponnese, which was the work of Scopas the Athenian, and in which all the three orders likewise occur.

The Ionic style was retained in Asia Minor, but it became less stunted and richer; whilst in Sicily the heavy Doric style continued to be preferred.

A freer treatment than was admissible in the case of temples was employed in smaller buildings; as, for instance, the Choragic monument of Lysicrates at Athens.

§ 74. The general characteristic of the architecture of this period was mature developement. The Doric style, freed from its former heaviness, developed a splendid grace. The Ionic style was no longer confined to the race of the Hellenes and to Asia Minor, and displayed a richer and brighter phase, joined with the severity of the Doric. Lastly, the Corinthian order was occasionally used, especially for smaller monuments.

FOURTH PERIOD.—FROM ALEXANDER THE GREAT TILL THE
SUBJUGATION OF GREECE IN THE MIDDLE OF THE SECOND
CENTURY AFTER CHRIST.

§ 75. Alexander, the founder of a mighty empire, was especially solicitous for the furtherance of Grecian art. Although after his death his empire was split up into many individual states, yet they were ruled by Greek princes. Grecian culture, in consequence, was widely spread, as these princes were naturally desirous to promote its interests in their capitals. New cities were founded, such as Alexandria and Antioch, as also Troas, Nicomedia, Prusia, and Seleucia, and consequently new fields of labour were opened for architects, who carried out their designs with a splendour and luxury which was but little in accordance with the previous rate of expenditure. In Greece, on the other hand, no such amount of building was going on, as her wants had been supplied in this respect by bygone generations. The Corinthian style was almost exclusively employed in the few buildings which were erected, while the Doric fell nearly into disuse, and generally speaking a taste for the colossal prevailed. From henceforward the true Grecian spirit and conception of form disappeared from architecture. It became susceptible to foreign elements, or, properly speaking, dwindled down into them.

§ 76. After this short historical summary an attempt must now be made to characterize the individual component parts which constitute the sum total of Grecian architecture.

And first of all the nature of the temples must be investigated and made clear—those buildings by which the development of Grecian architecture becomes especially evident to us, and which formed its principal aim and object, and which served as a type for buildings of another character.

§ 77. The typical form of temple did not alter, but variations in individual architectural details gave expression to characteristic differences of style. These differences form certain orders or styles, the peculiarities of which are easily recognized, and are permanently accepted as generic. Still, however, in different buildings slight modifications and alterations in proportion and ornamentation are

found, and a treatment of details that was sometimes vigorous, sometimes delicate. Such modifications, however, are always so introduced as to harmonize with the existing style.

§ 78. These orders or styles are usually called the column-orders, because it is in the column that the difference of style is most clearly perceptible. Of these orders there were in Greece, until the time of the Romans, three—viz., the Doric, the Ionic, and the Corinthian, which were developed and adopted in the foregoing historical succession. The Doric style is characterized by simplicity and strength, the Ionic by grace and delicacy, the Corinthian by more lightness and richness of decoration. Of these orders the Doric and the Ionic were those which were the earliest and oftenest employed in Greece, the former of the two being preferred for large temples. Later the Corinthian order supervened, and was principally used for buildings of small dimensions. It was the Romans who first employed this order in preference in the porticos of their temples of large dimensions, because it was intrinsically adapted to meet their taste for splendour and effect. The two first-named orders were so designated from the names of the races by which they were employed and developed.

In spite of all difference of the form and character of the details, the entire structure in both orders rests on the same principles. The severity and simplicity of the Doric order is expressed not only by the impression of the whole building, but also very clearly by the profile of the smallest moulding of the same; that is, by the shape of its outline, or what might be termed the profile of its intersection by a plane. The greater elegance of the Ionic order is expressed on the other hand both in its *ensemble* and its details, by finer and more numerous mouldings and by richer and more graceful ornamentation. Whilst the former order sheds its solemn and sublime influence at a distance, the latter appears to be suitable for those buildings which have to be viewed more closely.

§ 79. The principal parts which constitute a column-order are as follows:—

The column, which is always circular, and becomes smaller towards the top; this is called diminution. This tapering does not, however, assume the form of a straight line, but of an hyperbolic

curve, which is called the entasis, for the column swells in a gentle curve towards the middle, and the straight line is resumed as it approaches the top. Whilst the diminution answers the purpose of

Fig. 82.



Temple of Theseus at Athens.

supporting the weight, the curve gives an elastic and lifelike appearance to the support. Whilst the convex line prevents the column from looking concave, the curve is in reality so slight that it is hardly perceptible, being in the Parthenon, for instance, only $\frac{1}{48}$ of the height of the column.

The shaft is ornamented with flutings, which surround it. These are perpendicular channellings which give the column a varied and animated appearance by the alternation of light and shade, and pleasingly emphasize its circular form. (See Figs. 111 and 114 for the Doric, and Figs. 118 and 119 for the Ionic and Corinthian orders.)

§ 80. Belonging to the shaft, with the exception of the Doric, is the base or foot, which is requisite on æsthetic grounds. It always consists of horizontal members, of which the lower is a quadrangular slab, called the plinth, and the upper assume either a convex or a hollow profile. As a transition to the horizontal enta-

blature the column has besides a capital, which, in its organic formation, is to be regarded as the head of the column, and at the same time is the most characteristic part of the column-order.

§ 81. On the capital rests the entablature (*see* Fig. 82), consisting of three principal parts: the architrave, the frieze, and the cornice; over which rises on the front and back sides the pediment or gable, composed of tiles or slabs of marble, forming a slanting roof of more or less acute inclination: on the front side are placed ante-finæ, which are generally ornamented with a palm-leaf.

On the apex and two lower angles of the pediment were introduced acroteria, sometimes ornaments of flowers and tendrils (Figs.

Fig. 83.



Façade tile from the Temple of Diana, at Ephesus.

Fig. 84.



Acroteria, or Roof-pedestal, from the Temple of Theseus at Athens.

Fig. 85.



Acroteria from the Temple of Minerva at Ægina.

83 and 84), and sometimes statues of gods or animals (Fig. 85). These were placed on small pedestals, and offered an æsthetic contrast to the sliding effect which would otherwise have been produced by the oblique lines of the pediment.

The tympanum, which was somewhat recessed, contained groups of statues in high relief, which represented some mythological event.

§ 82. In conjunction with the column mention must here be made of the antæ, which were originally the projecting fronts

of the side walls in temples in *antis* (see Section 84), these were also slightly projected sideways. In Grecian buildings these *antæ* are never crowned with a capital, as these were only cal-

Fig. 86.

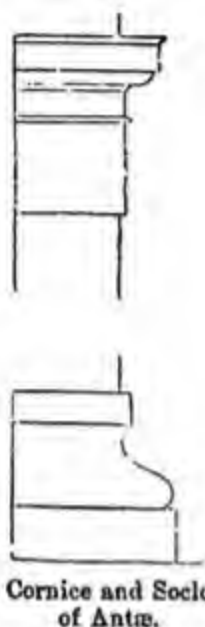
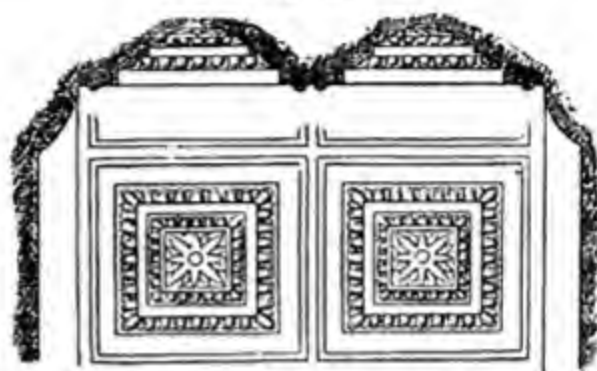


Fig. 87.



Section and View from beneath of the Caissons
from the Propylæum at Eleusis.

culated for a round shaft. They have, however their peculiar base and capping, which are quite different from those of the column, and are generally continued along the intervening walls, and answer the purpose of sup-

porting the architraves or cross beams which lie between the columns and the wall. On these cross beams are slabs for the ceiling of the portico, in which caissons, *i.e.*, square panels, are hollowed. (Fig. 87.)

§ 83. When all these architectural details are united in one harmonious whole, this *ensemble* has an incomparably imposing effect from the natural simplicity and clearness of its arrangement: and especially the manner in which the sculptural embellishment is introduced, so as never to come into collision with the architectural organism, but rather to accommodate itself to it. In no Grecian monument is a sense of excess produced by superabundance of ornamentation or sculpture on individual parts of the structure, such as pediment or frieze. This separation of the plastic from the architectural element, together with its subordination to the dominant motive, is especially worthy of imitation for all time. Caryatides (Fig. 88) are a blending of architecture and sculpture, but they are not of frequent occurrence. These Caryatides are human figures,

which serve as supports instead of a column (Fig. 89), and a similar purpose is answered by male figures, which are technically called *Atlantes*.

§ 84. Forms of temples. The different forms of temples are constituted by the application of the above-mentioned architectonical peculiarities in a less or greater degree.

1. The temple in *antis* (Fig. 90), in which the *pteromata*, or ends

Fig. 88.

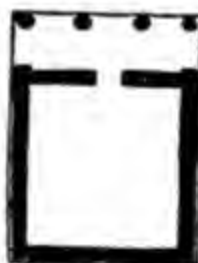


Caryatis from the Erechtheum at Athens.

Fig. 90.

Temple in *antis* of Diana Propylea at Ephesus.

Fig. 91.



Prostyle.

Fig. 89.



Profile of the Caryatis, Fig. 88, with pedestal and entablature.

of the side walls, project so as to form pilaster-like piers called *antæ*, between which are columns, generally two in number.

2. The *prostyle* (Fig. 91), in which the *pronaos*, or porch, is formed in its entire breadth by a disposition of columns, generally four in number, so that the corner columns stand in front of the *antæ*, with an intervening space.

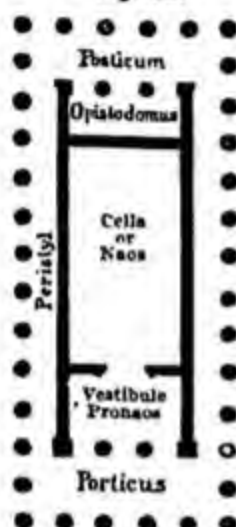
3. The *amphiprostyle*, in which both the front and back of the temple have the *prostyle* arrangement.

4. The *peristyle* or *peripteral* (Fig. 92), surrounded by columns on all sides, in which the front and back frequently have double rows of columns, and are both *hexastyle*.

5. The pseudoperipteral, occurring extremely rarely in Grecian architecture, in which the peripteral is imitated by columns attached to the walls.

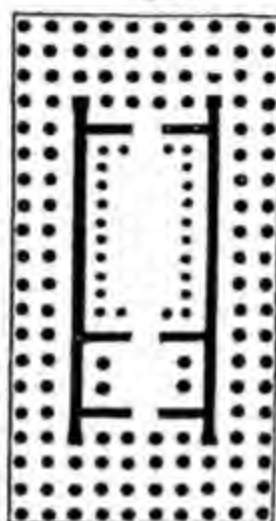
6. The dipteral, surrounded by a double colonnade, with porticos of from eight to ten columns in front (Fig. 93).

Fig. 92.



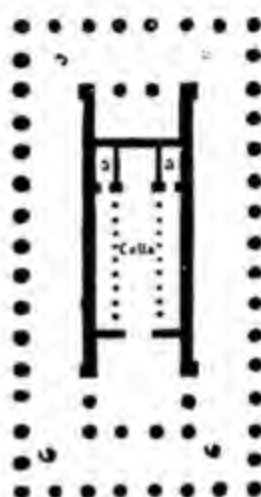
Temple of Theseus at Athens. Peripteral.

Fig. 93.



Temple of Jupiter Olympus at Athens. Dipteral.

Fig. 94.



Temple of Jupiter Olympus at Selinuntum. Pseudodipteral.

7. The pseudodipteral, which rarely occurs, is a dipteral with the inner range of columns omitted throughout (Fig. 94).

8. The circular temples were of two kinds:—

- a. The most usual was the peripteral, which had a circular cella, or cell, surrounded by a colonnade (Fig. 95).
- b. The monopteral, which was an open circle of columns supporting a roof or entablature, and consequently without a cella.
- c. The pseudoperipteral, in which, as in the oblong pseudoperipteral, the columns were attached to the walls of the cella.

These circular temples, which are far from common, and in which Corinthian columns are usually employed, were, for the most part, intended for the worship of Vesta.

§ 85. A further distinction was made in temples according to the number of columns in front; this number, however, was always an

Fig. 95.



Temple of Vesta, at Tivoli.

even one. They are called tetrastyle, nexastyle, octastyle, decastyle, and dodecastyle, from having four, six, eight, ten, and twelve columns respectively. The number of columns lengthways in the peripteral was very various, but was generally uneven. The Hypæthral was a temple of large dimensions, in which the inner space, or cella, was open, and had within its walls colonnades corresponding to the external rows of columns, which were often double. Thus the temple in Fig. 93 is a decastyle hypæthral dipteral.

A further distinction is drawn according to the space between the columns: thus we have the pycnostyle (narrow column), $1\frac{1}{2}$ times the diameter measured at the apophage; systyle (close column), 2 diameters; eustyle (elegant column), $2\frac{1}{3}$ diameters; diastyle (wide column), 3 diameters; and aræostyle (very wide column), $3\frac{1}{2}$ diameters. See Fig. 96. The last two varieties do not properly belong to Grecian architecture, but were called into existence by the Romans.

Fig. 96.

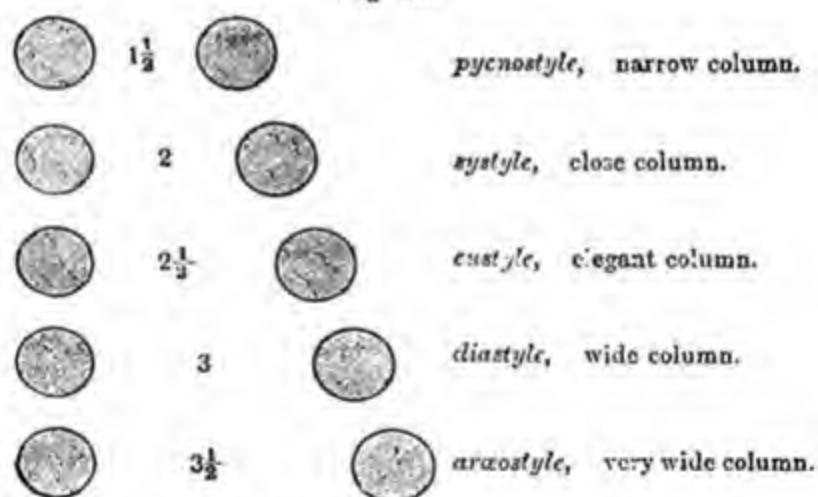


Diagram of Intercolumniation.

§ 86. The temple consisted of the cella, or naos, which was lighted from above, and without windows, and of the portico, or pronaos, which was connected with the naos by a door. Special sanctuaria were connected with many of these cellæ (*a*, Fig. 94), whilst in other instances there occurred a posticum, or opisthodomus, annexed, which probably served as a treasury.

§ 87. As regards the form of the temples, it was influenced, as we have previously seen, in various ways, by the peculiarities of the

Doric and Ionic races ; but the different parts must now be described more fully and more clearly than was done in the general preliminary sketch contained in Sections 70—82. And first of all attention must be called to the mouldings, which to a certain degree constitute the architectural alphabet. In the same way as letters serve for the formation of words in order to express thought, so the mouldings, viewed collectively, are of service in the definition of architectural character.

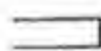
The characteristics of mouldings are expressed by their profile ; that is, the external outline of their intersection by a plane. The form of the profile constitutes the essential criterion of the differences and gradations of style not only in Grecian architecture, but also in later styles. A due understanding of the subject is consequently of the highest importance.

The principal mouldings are the following :

The list, fillet, or tenia, which is particularly employed as a connecting link between curved mouldings (Fig. 97). When broader it forms the abacus. It also, as the corona (*geison*) in the Doric, forms the most essential moulding of the cornice.

The astragal (Fig. 99) is a small moulding, of a semicircular profile, which serves as a bead between other mouldings,

Fig. 97.



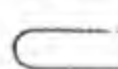
Fillet.

Fig. 98.



Tenia.

Fig. 99.



Astragal.

or to mark off the neck at the junction of the capital and the shaft.

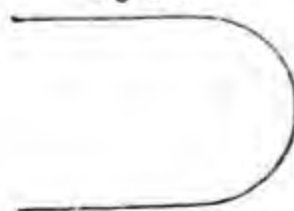
When this astragal assumed larger dimensions, it was employed at the base of the column, and was called the torus (Fig. 100).

Fig. 101.



Ovolo.

Fig. 100.



Torus.

Fig. 102.



Echinus.

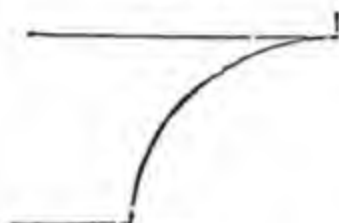
The swelling egg-shaped ovolo (Fig. 101) occurs in the Doric cornice, at its upper termination, beneath a fillet, and is also em-

ployed between other mouldings. When enriched it is called an egg and tongue moulding, and is employed as part of the Ionic capital. With a rather more oblique curve and more marked projection, the moulding occurs as the echinus in the Doric capital (Fig. 102), and with further alteration in outline as the cyma or ogee of the Doric entablature.

Fig. 103.



Fig. 104.



Cavetti.

Fig. 105.

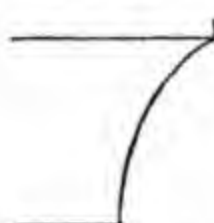
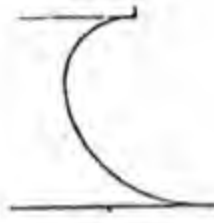


Fig. 106.



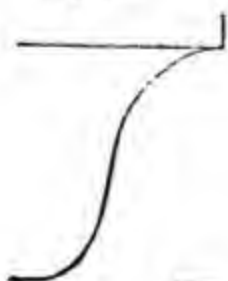
Cavetto formed of two quarter-circles.

The cavetto was a hollow moulding in the shape of a quadrant, which, when of small dimensions, was used between other mouldings, as, for instance, at the upper and lower ends of the neck; but when of large size it was also employed as the crowning moulding of the cornice (Fig. 104), though when so used in Grecian buildings its shape was somewhat contracted (Fig. 105).

In the Attic base a cavetto occurred, which was composed of two quarter-circles with different radii (Fig. 106).

The cyma, in the shape of a wavy line, was convex above and concave below (Fig. 107). Fig. 108 represents the same sharply indented, as it occurred, for instance, in the capitals of antæ in Grecian architecture (Fig. 108).

Fig. 109.



Cyma.

Fig. 108.



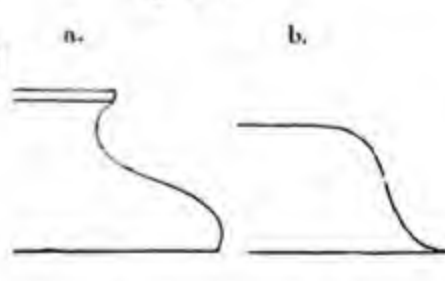
Bird's-beak.

Fig. 107.



Cyma.

Fig. 110.



Cyma reversa, or Talon.

The ogee was frequently employed as the upper division of the Ionic and Corinthian cornice, but it was then concave above and

convex below, and was surmounted by a fillet (Fig. 109). Both mouldings, 107 and 109, were employed as base mouldings in their reversed shape, and were then known as *cyma reversa* (Fig. 110 *a* and *b*).

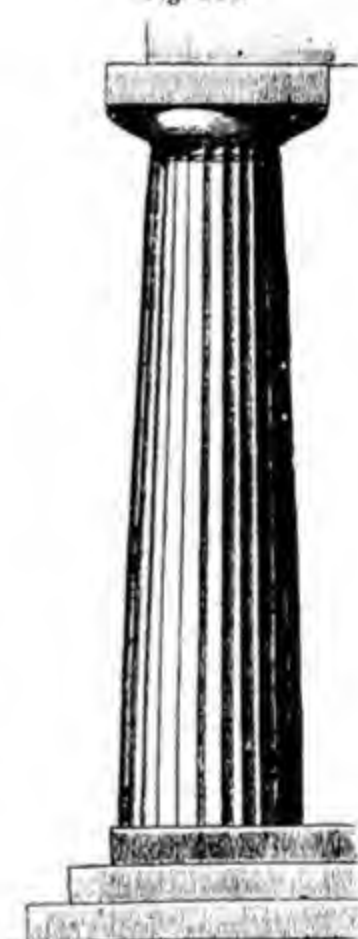
§ 88. Of the two styles which were employed by the Dorian and Ionian races, and which are in consequence usually called the Doric and Ionic orders, the older is the Doric.

Its principal features, as well as its mouldings and ornaments, are simple, its character is severe, and it bears throughout the impress of repose, solidity, and strength.

The Doric columns (Fig. 111), which are short, powerful, and closely ranged together, in order to support the weight of the massive entablature, consist of the shaft and the capital, and rest immediately without base on the upper step, which serves as the ground-floor, or stereobate of the temple. The shaft is channelled perpendicularly into twenty flutes, which have a sharp edge, or arris (Fig. 114), and is greatly diminished towards the top, so that the diameter above is much less than at the base. This tapering does not take place in a straight line, but by a gradual decrease in a gentle parabolic curve, which is known as the entasis.

§ 89. The capital (Figs. 113 and 116), the object of which in supporting weight is clearly evident, consists of three parts. The echinus is the most important of these, as being by its formation most essentially characteristic of the various shades of difference in the Doric style. The echinus is surrounded at the lower part by several fillets, as also by a cavetto, or other hollow moulding, and is separated at the top from the architrave by the abacus, which is a quadrangular block, projecting considerably beyond the shaft. The *antæ*, or

Fig. 111.



Doric Column from the Temple of Neptune at Paestum.

pilasters which correspond to the columns, have no capitals, properly speaking, but a top moulding of the description shown in the profile in Fig. 115.

Fig. 112.



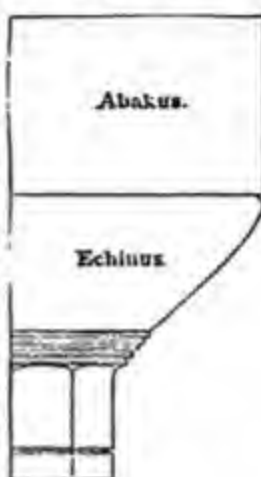
Profile of Fillets under the Echinus shown in Fig. 113 on an enlarged scale.

Fig. 115.



Profile of a pilaster cornice.

Fig. 113.



Profile of a Doric Capital at the Parthenon at Athens.

Fig. 114.



Flutings of the Doric Column, $\frac{1}{4}$ scale.

Fig. 116.



The Doric Order in the Parthenon at Athens.

§ 90. The architrave is a rectangular block, separated by a projecting fillet from the frieze.

The frieze of the Doric order is not taken up with sculpture in uninterrupted succession, but it occurs in groups at regular intervals, separated by features called tryglyphs (Fig. 116 *a*), which are quadrangular, projecting slabs, higher than they are broad, with perpendicular channels, and are to be considered as supports of the cornice. They are distributed in such a way, that one occurs over the middle of each column and of each intervening space; in the case of the corner columns, however, the tryglyphs are introduced at the corners and not over the centre of the column. The spaces formed between the tryglyphs

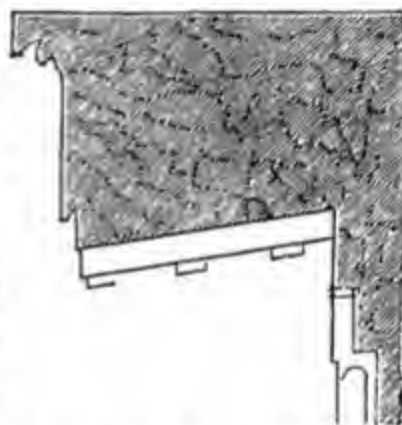
are called metopes (*b*). They are either squares or oblongs of greater breadth than height, and were originally open, and occasionally used as depositories for sacrificial implements. After they were closed, alto-reliefs were generally introduced; which, in the larger temples, represented the deeds of gods and heroes, and in the smaller one the skulls of animals. Under each tryglyph, under the fillet of the architrave, occurs a small fascia, from which hangs a row of so-called guttæ, or drops (*c*), which correspond in number and position to the tryglyphs.

In the cornice (Figs. 116 and 117) small slabs, called mutules, project in the first place over each tryglyph (Fig. 116 *d*), from the quadrangular lower side of which, being equal in breadth to the tryglyphs, depend three rows of guttæ, similar to those which occur below the tryglyph. They have a slanting direction, and are sometimes introduced not only over the tryglyphs, but also over the metopes. The prominent slab or corona which caps these (compare Fig. 85 *g*) is finished off by an independent leaf-moulding, which is in its turn surmounted by the cyma, or ogee, which, being of large proportions and decorated with lions' heads, forms the topmost finish of the structure.

The pediment has neither tryglyphs nor mutules.

§ 91. During their period of development, Doric buildings assumed heavy, massive proportions. Most of the Grecian temples in Italy and Sicily belonged to this period. The diminution of the column is so marked that the diameter of the upper part only equals two-thirds of the lower (*see* Fig. 111); the distance between the columns scarcely exceeds the breadth of the lower diameter, which in itself was equal to one-fourth of the height of the column. At the same time the entablature is occasionally half the height of the column, whilst the pediment assumes the same proportion. The mouldings, especially the echinus, have profiles which correspond with these heavy proportions. Many temples, however, which preserve

Fig. 117.

Profile of the Cornice, Fig. 116,
on an enlarged scale.

this heavy character in their main outlines, are more elegant in subsidiary detail.

§ 92. On the other hand, during the palmy days of the Doric style, when it was in general use in Greece itself, by abandoning its former too heavy proportions it ceased to convey the impression of excessive strength, and without relinquishing any of its beauties, it assumed that tender but, at the same time, magnificent grace which is characteristic of Grecian genius. The column had a diminution of only one-sixth of the diameter and an interval of $1\frac{1}{2}$, and reached a height of from $5\frac{1}{4}$ to 6 times the diameter (*see* Fig. 82). The height of the entablature and of the pediment was reduced to one-third of the height of the column. The individual parts were proportionately more elegantly formed.

§ 93. In the period of decadence the proportions became still lighter, and the individual parts appeared flat and wanting in character, with less reference to the structure as a whole.

§ 94. The Ionic order was indebted for its earlier development to western Asiatic influence, notably to that of Persepolis; but its maturer beauties are to be attributed to a Doric source. Its

main features are the same as in the Doric style; their forms, however, are different. The Ionic order has more mouldings, its forms are richer and more elegant, and, as a style, it is lighter and more graceful than the Doric. The Doric order has been compared to the male and the Ionic to the female figure.

§ 95. The Ionic column has a less diminished shaft and a smaller parabolic curve than the Doric. It is, like the Doric, channelled; the flutings, which

are 24 in number, are separated by annulets (Fig. 119), and are therefore narrower, but at the same time deeper, than the Doric; and are terminated at the top and bottom by a final curvature.

§ 96. The column has a base, which, as essential parts, has a

Fig. 118.



Ionic Pillar in the
Erechtheum at
Athens.

Fig. 119.

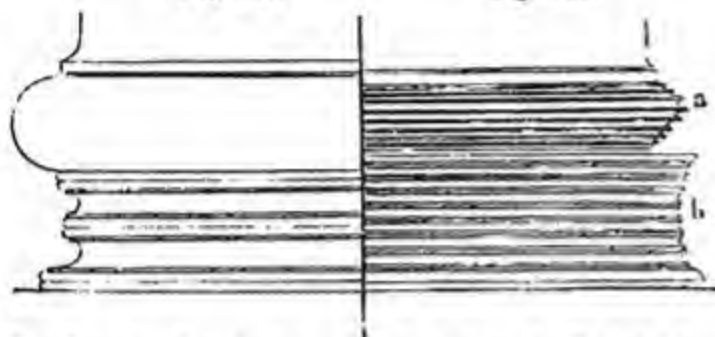
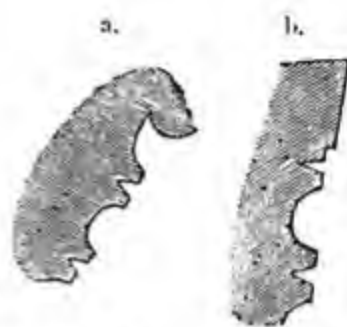


Plan of the Flutings of
the Ionic and Corin-
thian Column. $\frac{1}{4}$ scale.

moulded or plain cavetto with a torus above (Fig. 121), or the torus is placed above two cavetti, which are themselves separated by

Fig. 120.

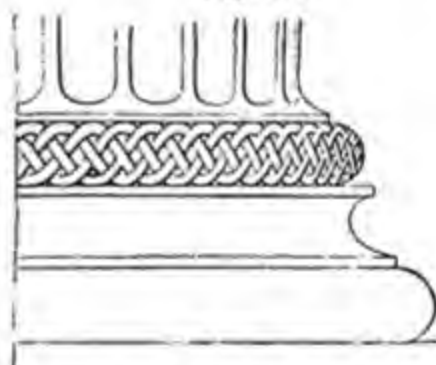
Fig. 121.

Base from the Temple of Apollo
Didymæus at Miletus.Base from the Temple of
Hera at Samos.Moulding of
the Torus.Moulding of
the Cavetto.

several intervening mouldings (Figs. 120 and 122). The so-called Attic base is the form which most frequently occurs (Fig. 123); and

Fig. 122.

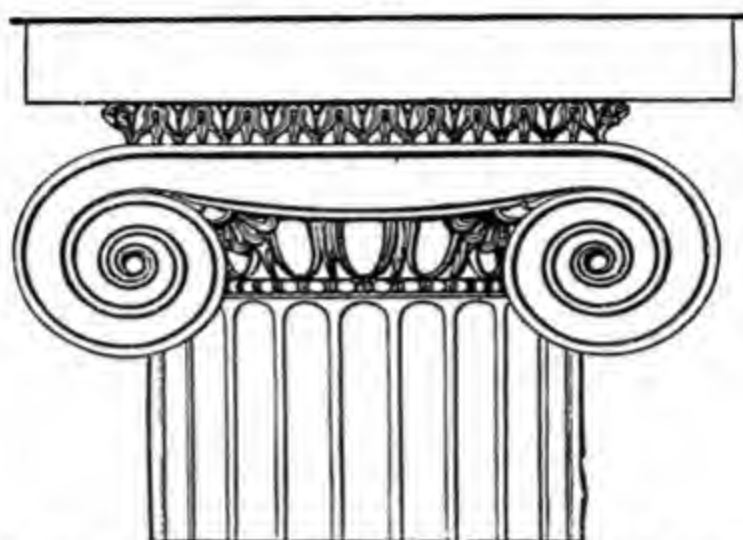
Fig. 123.

Profile of the base of a Column in the
Temple of Minerva Polias at Priene.Attic Base in the Temple of Minerva Polias
at Athens.

consists of two tori separated by a cavetto, the whole having a plinth as basis; the upper torus being less high and projecting than the lower.

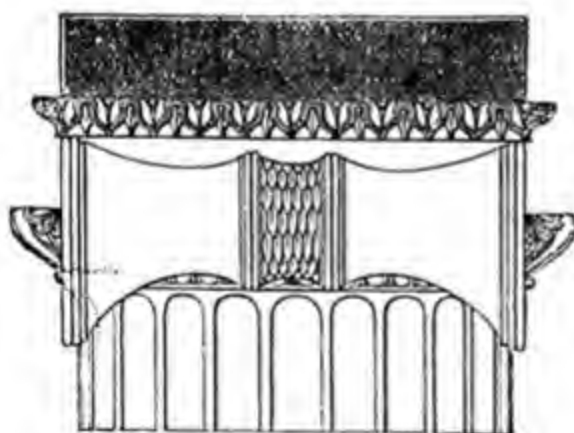
§ 97. In the capital (Fig. 124) the Doric echinus is replaced either by a cyma ornamented with leaves, or, more generally, by an ovolo with a pearl-beading beneath. Instead of the Doric abacus there occurs a cushion-like band in its place, whose ends wound in a spiral shape and coiled with elastic force, when viewed either from

Fig. 124.



Ionic Capital from the Temple of Minerva Polias at Prieno.

Fig. 125.

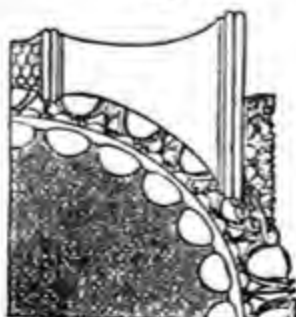


Side-view of Fig. 124.

Fig. 126.

Section of the Volute
in Fig. 125.

Fig. 127.

 $\frac{1}{4}$ plan of Fig. 124.

in front or behind, form volutes, which on both sides considerably exceed the diameter of the column, and also surpass the architrave in breadth. These volutes, or scrolls, when viewed from the side, appear to meet in the middle, and form a wavy line over the echinus (Fig. 125). The intervals of the spiral coils are slightly hollowed, in order to bring them into more relief, and in this way the so-called channel is formed, which is continued in the horizontal portion which connects the volutes.

In one description of this form of capital the volutes project much more

prominently and have double channels, so that they have the appearance of two superincumbent and intertwining cushions. The upper part of the shaft is, moreover, separated from the main portion by fillets, connected with the capital as a necking, and ornamented with enrichments of flowers and tendrils which run round it (Fig. 128).

Fig. 128.



Ionic Capital in the Erechtheum at Athens.

Fig. 129.



Ionic Capital from the Temple of Apollo at Bassæ.

Fig. 129 shows an exceptional Ionic capital, which is frequently met with, but which differs from the normal shape.

The good effect of the Ionic capital is really only produced by the front-view. It seems calculated to be introduced between pillars and antæ, and not in a disconnected peristyle with angle columns. In angle columns, however, the volutes are sometimes constructed in such a way that they meet at both sides diagonally (Fig. 130).

Fig. 130.

c.



Half Side-View.



Ionic Angle-Column from the Temple of Minerva Polias at Athens. Front View.

a.

b.



Sections: a. From the front; b. From the side.

The capital of the antæ and pilasters is without volutes, as is

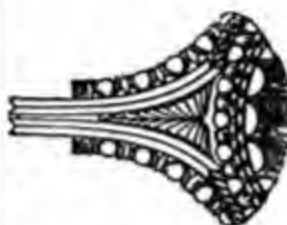
seen in Fig. 131. The shaft has no flutings; the base, on the other hand, is the same as in the columns, and is continued round the walls as a plinth..

Fig. 131.



Ionic Antæ Capital from the Temple of Minerva Polias at Athens.

d.



Plan of an Angle-Volute.

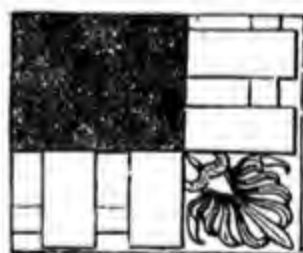
Fig. 132.



Ionic Entablature from the Temple of Minerva Polias at Priene.

§ 98. The architrave consists of several *faciæ* which project slightly one over the other, and which are separated by small hollowed mouldings and capped by a moulded band (Fig. 132). The frieze is undivided, either plain or with arabesques representing either implements used in worship or simple plants. The frieze also bears the name of the Zophorus.

Fig. 133.



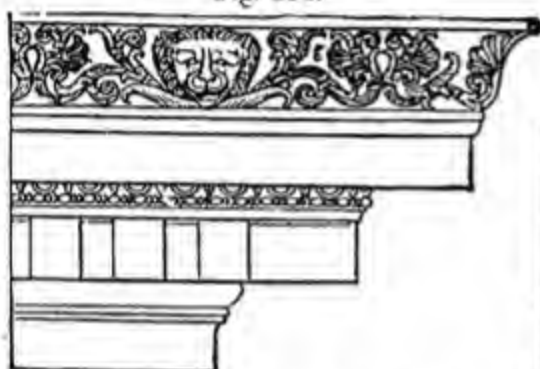
View of Corner-Dentela from beneath.

In the cornice the corona forms, as in the Doric, the principal feature, but it does not stand out rectangularly, as in the Doric order, but gains its projection by several gradual richly moulded gradations.

Under the corona, between mouldings which vary in different instances, occur denticuli, or dentels, which may be defined as small quadrangular blocks resembling teeth, cut out at narrow intervals in a square block. When these dentels meet at the corners (Fig. 133), a plain square space is formed in which sometimes an ornamentation, as shown in Fig. 133, is introduced, or occasionally a glandiform drop, as depicted in Fig. 141.

These dentels do not occur in the Ionic structures in Attica during

Fig. 134.



Ionic Cornice from the Temple of
Minerva Polias at Priene.

Fig. 135.



Section of Fig. 134, through the Lion's head
as rain-spout.

the first and best period: in those in Asia Minor, on the other hand, they are invariably met with. Over the dentels and below the corona is the cyma (*b*), the contour of which is wavy.

The crowning mouldings are carried out conformably to the high ornamentation and perfection of the lower portions. The same is the case with the upper mouldings of the antæ and the coffered work in the roof of the interior.

§ 99. As regards the proportions of the Ionic order, no such remarkable difference as in the Doric is perceptible in the monuments which have been preserved to us. The height of the column is from eight-and-a-half to nine times the lower diameter; the distance between the columns averages about twice the diameter, while the height of the entablature is not quite one quarter that of the column.

§ 100. The essential difference between the Corinthian order and the Ionic consists only in the capital; but its proportions are lighter and more slender, and the individual parts are more rich and

elegant. The column is sometimes ten times the height of the lower diameter, and is fluted like the Ionic. The bases of the two orders

Fig. 136.



Capital of the Choragic Monument
of Lysicrates at Athens.

are materially the same. The Attic base is generally employed, which has been described under the Ionic order (Fig. 123).

§ 101. The capital (Figs. 136 and 137) has generally the shape of an expanded calyx; its form in this instance, as so often happens in the architecture of other nations, being borrowed from organic nature. Over an astragal, which separates the capital from the shaft, rise first two rows of leaves, each consisting of eight leaves so arranged that those of the second row spring from the interstices of the first. From the interstices of this second row spring stems with

Fig. 137.



Corinthian Capital from the Temple of Apollo Didymæus at Miletus.

a sort of bud, under the leaves of which sprout two stalks, which curl spirally towards both sides, in such a manner that each of the smaller scrolls combines in the middle, whilst the thicker ones meet at the angles, and, projecting considerably, form graceful volutes. The Acanthus, or brank-ursine, is imitated in the leaves, as well as in the buds and stalks. The abacus is square in shape, with its sides curved into a retreating semicircle, and its truncated corners covered by the conjunction of volutes above referred to (Fig. 138). A flower is placed in the middle of each of these hollowed sides. The above are the principal features of the Corinthian capital, which is, however, susceptible of greater variation and freedom than the capitals of other orders. The capitals sometimes occur without volutes.

Fig. 138.



Abacus of the Corinthian Capital.

The structural tendency which prevails in the capitals of all orders to change from the circular form of the shaft into the square,

Fig. 139.



Corinthian Capital from the Temple of Apollo Didymæus at Miletus.

and which in the Doric order takes place immediately, is modified in the Ionic by the voluted nature of the capital, and in the Corinthian by representations of vegetable life. Without being an actual imitation of nature, still the designs of nature are therein artistically conceived and made use of. Figs. 139 and 140 serve as an example

Fig. 140.

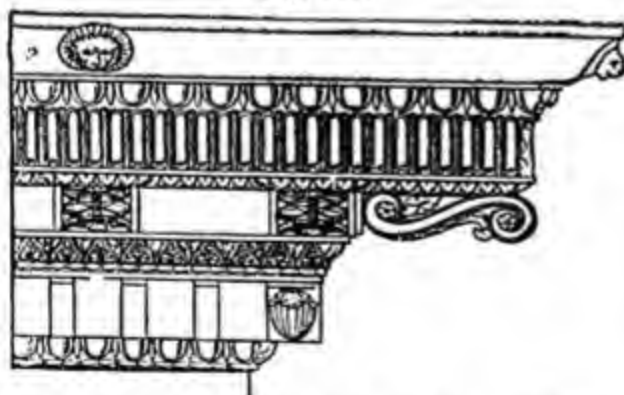


Pilaster Capital from the Temple of Apollo Didymæus.

how the capitals of antæ and pilasters differ at times from those of columns.

§ 102. The Corinthian cornice (Figs. 141 to 144*) is only distinguished from the Ionic by its mutules and modillions, which take the place of the dentels in the latter style. They are fewer in num-

Fig. 141.



Corinthian Cornice from the Temple of Jupiter Stator at Rome.

Fig. 145.

Acanthus Leaf. a, front-view.
b, side-view.

* Owing to the lack of a Corinthian Cornice in any well-preserved Grecian building, the illustration has to be borrowed from a Roman structure. This, however, shows the Grecian design of the Corinthian Cornice, with the addition of increased richness in decoration.

ber, but richer and more ornamented, as well as more projecting. They have an undulating shape, like volutes, with an acanthus leaf on the under side (Fig. 145). Between these in the corona rectangular

Fig. 142.



Side-view of the Mutules in Fig. 141.

coffers are sunk, ornamented with rosettes. Occasionally dentels occur with mutules beneath: in fact, the Corinthian cornice is liable to frequent variations in its formation and composition.

§ 103. Grecian architectural designs are in general to be denominated as national in so far as they could only have been developed in conjunction with that love of the beautiful which was so eminently characteristic of the Greek, together with an intuitive perception of harmony and moderation in embellishment. One principal feature, however, of Grecian artistic forms is that

they owe their existence and development to universal æsthetic laws, and that while due consideration is taken of material and construction, the arbitrary principle which we noticed, for instance, in Indian architecture, is totally unrecognised. A natural development from their original basis is either clearly perceptible, or pointed to in such a way that the constructive purpose and design appear clearly through all enrichment and ornamentation. The form and embellishment of the individual parts are not arbitrarily arranged; and they satisfy

Fig. 143.



Front-view of the Mutules in Fig. 141.

Fig. 144.



View from beneath, with panellings of the Mutules in Fig. 141.

the requirements of the eye and the taste by the manner and the position in which they are introduced, and give expression to constructive functions by the employment of most significative forms.

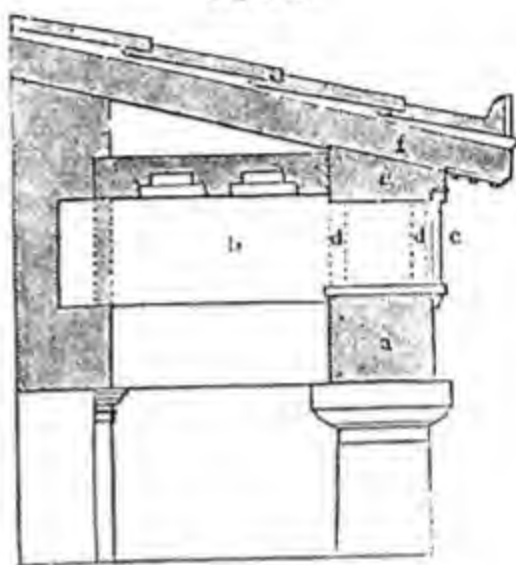
Attention must here be directed to the influence which the beautiful close-grained marble of which their buildings were constructed must have exercised on the outlines of Grecian art. By comparison with other nations we see, that the material is of primary importance in the development of an architectural style, and practically determines its forms; exercising as great an influence as do nationalities and æsthetics. Thus in Western Asia the constructions of burnt or unburnt bricks or wood form a striking contrast to the Indian monuments of Eastern Asia, which are hewn out of the live rock, while both present an equally vivid antithesis to Grecian forms of art.

§ 104. As regards the fulfilment of æsthetic requirements, to which allusion has been made in a previous paragraph, special mention must here be made of the way in which the Grecian column and its capital exemplifies the conflict of supporting and supported bodies, especially the individual parts of the capital. This is shown in the Doric capital by the echinus and the necking, in the Ionic by the volutes, which seem designed like an intermediate elastic covering. The shaft, besides, typifies the same principle in its vigorous plant-like structure, and by its entasis expresses its inherent strength, which is merely checked by the encumbrance of the superstructure, whilst the flutings add materially to the soaring effect of the shaft, and, besides giving richness to the column, perform also the office of bringing out its circular shape. The intention of this design is corroborated by the fact that neither pilasters nor antæ are fluted.

In the Doric order the above-mentioned points are still more strictly adhered to, as the severity of its whole tone demands. The echinus with its connecting fillets has the additional object of counterbalancing the marked diminution of the column. In the Corinthian column, which certainly only occurs at a later period and in isolated instances, this characteristic and constructional design is but slightly, or not at all, perceptible; for grace and elegance were then more highly esteemed than dignity and solemnity.

§ 105. In the case of the entablature also, especially in the Doric, the construction of stone architecture* was effectuated in a simple manner. The architraves (Fig. 146 *a*) which rest on the column, support the stone ceiling-pieces (*b*), which connect the row of columns with the wall behind: the ends of these blocks form triglyphs (*c*), or at any rate give the idea of the same, since sometimes perpendicular prism-like cavities are hewn, under which appear the guttæ, whose shape was borrowed from nature (see Fig. 116), whilst the spaces between, which are called metopes, remain open, or are closed with stone slabs (*d*). Slightly projecting over these are the flat stones (*e*), which themselves

Fig. 146.



Construction of the Doric Entablature.

support the corona (*f*), on which rest the tiles. Under the cornice, as under the triglyphs, and corresponding with them, guttæ are employed, in rows one behind the other. Whilst the flat roof-tiles which lie over the cornice, and which are necessarily pierced in order to allow the water to run off, are provided with leaf mouldings by way of embellishment, the crowning ornament is attained by the antefixæ, or façade-tiles, which often assume the shape of palm leaves, and are placed in front of the gutter-tiles (*x* in Fig. 149), which latter are intended to cover the joints in the flat tiles (*y* in Fig. 149).

In the Ionic entablature the coronæ are often supported by dentels placed at small intervals, which serve to relieve the length, and produce a lively and ornamental effect by the abrupt alternation of light and shade.

* The old opinion, held by Hirt and others, that the forms of Grecian Architecture owe their existence to wood-work may now fairly be considered as refuted and exploded. The subject is thoroughly discussed in a publication entitled "The most Essential Elements of Monumental Architecture, by J. H. Wolff."

The cross-beams, which form the triglyphs in the Doric frieze, are consequently not perceptible, and are, moreover, hidden by a

Fig. 147.



Antefixa from the Propylæum at Athens.

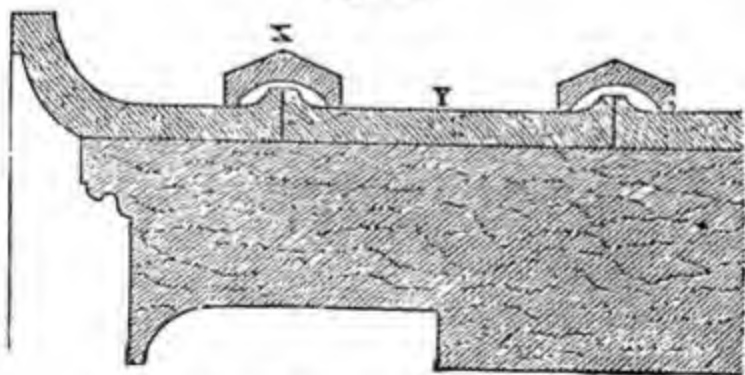
Fig. 148.



Antefixa with painted embellishment, from the Acropolis at Athens.

connecting fillet. This cross-beam construction was soon abandoned both in the Doric and Ionic orders, whilst in their stead thin

Fig. 149.



Grecian Roof-Tile construction.

coating-slabs were employed to effect a real and perceptible lightening; at the same time, however, the original shape was externally preserved.

We gather from this that all these parts, besides the constructive reasons

mentioned above, have reference to a due and important regard for form. In this way the minor projection of the architrave and its mouldings prepares the eye for the great prominence of the cornice, whilst the retreating frieze forms the intermediate step; for

a cornice without a frieze must invariably produce an unsatisfactory impression. The same principle, of leading from smaller to larger projections through intervening links, is recognised in other parts of Grecian architecture besides the entablature: and this assists that contrast between perpendicular and horizontal lines, which is requisite in order to give animation to the structure, as well as for that between the supporting and supported portions—a contrast which is not abrupt but gentle, and effectuated by alternately marked or slight projection and retraction of the contour, both in the plan and the profile of the building.

§ 106. The embellishments which the individual mouldings of the cornice received in all the columnar orders, remain usually the same, accommodating themselves to the profile and position in which they are introduced. These embellishments are pearl-beading for fillets, for

Fig. 150.



Ovolo with Pearl-Beading.

Fig. 151.



Leaf-Bud on ogee Moulding.

Fig. 152.



Fret.

Fig. 153.



154.



Various Fret patterns.

quarter-rounds, or ovolos, oval-shaped eggs (Fig. 150): for the undulated moulding or cyma principally the pointed wavy leaf

Fig. 155.



Fig. 156.



Various Fret Patterns.

Fig. 159.



Double Twist on an Astragal.

Fig. 161.



Bay-Leaf Garland Ornament of the Torus.

Fig. 157.



Scroll Enrichment.

Fig. 158.



Ornament on Architrave Soffit.

Fig. 160.



Guilloche Pattern.

Fig. 162.



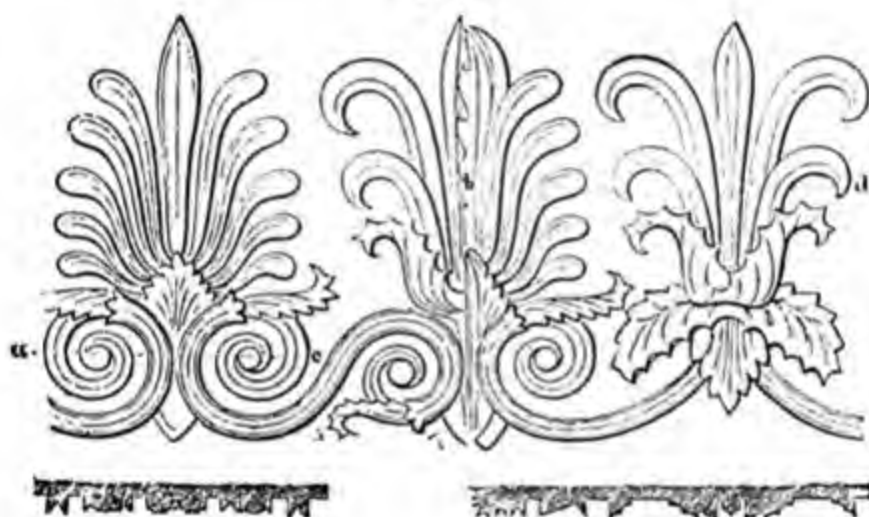
Painted Ornaments.

(Fig. 151), whilst with bands, teniæ, and quadrangular slabs the rectilinear intertwined fret (Fig. 152 to 156), or the scroll enrichment (Fig. 157) was used. The scotia, with its simple hollowing, as well as the wavy cyma reversa, are ornamented as is shown by Fig. 132 *b* and by Figs. 164 to 167.

An ornament of frequent occurrence is the simple or double scroll (Figs. 158 and 159), which is generally employed on the tori of the base or on the soffits of the architrave (Fig. 160). On the torus is also to be found an enrichment of bay-leaves, fastened together like a garland (Fig. 161).

It is a point particularly worthy of notice that these embellishments in the Grecian style uniformly assist in bringing out the intention of the mouldings, in such a way that the magnificence of Grecian ornamentation never, with all its richness, runs counter to the simple, moderate, and practical character of the style, for the repetition

Fig. 163.

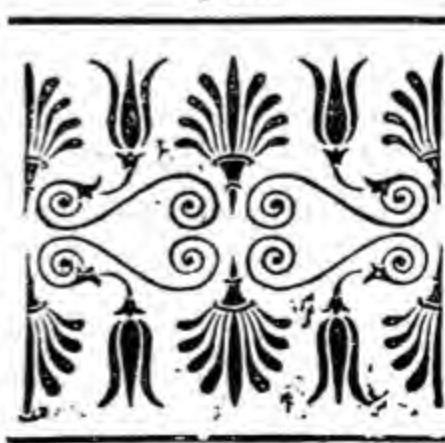
Profile in *a c*.Profile in *b d*.

Palmette Ornaments from the Erechtheum at Athens.

Fig. 164.



Fig. 165.



Painted Ornaments on Friezes and Faciæ.

of each scheme of ornamentation in form and adjustment fulfils to a certain extent that office for architecture which metre does for poetry.

The leaves and stalks of the acanthus plant are the predominating element in Grecian ornamentation. Palm-leaves, after the model of the shoots of the pine-apple and the flower of the honey-suckle, are also employed; and these forms of enrichment are, as a matter of fact, those most in use at the present day.

§ 107. In Grecian architecture everything is developed organically and naturally. Its architectonics remain free from foreign, symbolic and arbitrary elements, and are developed in freedom, owing to the artistic feeling of the Greeks, and are thus blended into an independent whole, incapable of producing any unæsthetic structure.

As essentially characteristic of Grecian architecture the following points must be particularly noticed: firstly, that stone construction was the ruling feature in Grecian buildings, both for the whole and the individual details, so far as to occasion a universally received character as regards the exterior, even though portions of the interior were constructed of wood, as for instance, the roofing; secondly, that all spaces, as well as all openings in the walls, were invariably covered over horizontally. In the latter case, this was effected by one stone or lintel, and by an architrave over interspaces of columns or pilasters; but in the spaces of the interior a roofing of beams of wood was also in use, together with other horizontal coverings of stone.

Although the principal forms in general remained the same, yet there existed no fixed law on the subject, as is shown by the numerous modifications of proportion which occur; whence we may gather that circumstances and sentiment were allowed free play, with a certain artistic liberty in detail. It is because, whilst truth and purity of form are maintained, a certain freedom in manipulation is at the same time accorded, that Grecian architecture remains an undying example for all ages. But as regards imitation of the same, it must be borne in mind that Grecian architecture, originating as it did from a national element, only assumes its right and fitting position when in that element.

§ 108. The small size of Grecian buildings as contrasted with the colossal structures of other nations is particularly noticeable, and is a further proof of a pure and delicate architectonic feeling; the

pleasing impression being produced by beauty of form and proportion, without recourse to massiveness being necessary; and indeed the sense of moderation in all relations of life was in strict accordance with this feeling.

§ 109. The impression produced by the architecture of Grecian temples was greatly enhanced by the wall behind the columns presenting an unbroken background, inasmuch as it was without openings, the one door doing little towards marring the effect. Although the means employed in lighting the cella, or inner part of the temple, are not definitely known or agreed upon, still it may be assumed that this was accomplished by leaving the middle part open above, supported by columns, in the same way as in the atrium of dwelling-houses.

By the introduction of windows the meaning and effect of the Grecian columnar façade would be marred. When windows were introduced, they, like the doors, were usually constructed rather smaller above than below, in the shape shown in Fig. 166. Besides the moulded architrave seen in the figure, both doors and windows have sometimes, as capping, a cornice immediately above the lintel, but never a complete entablature with frieze, as is the fashion in our times. It is only when the cornice is supported by two horizontal beams at the corners that even the former can occur.

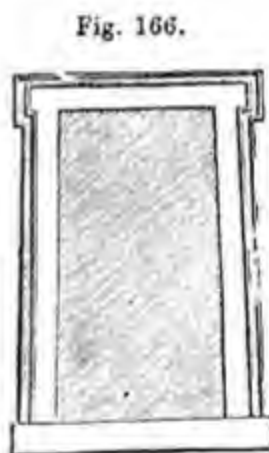
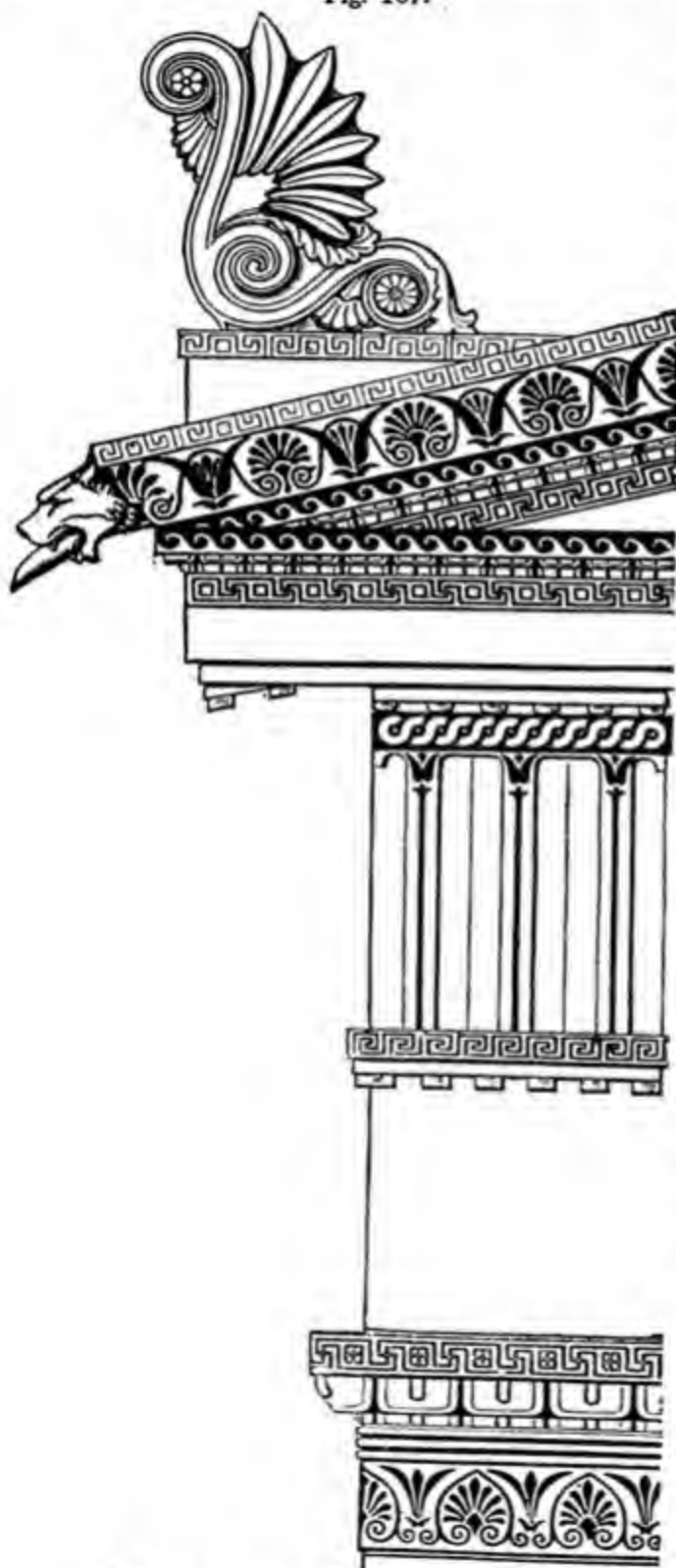


Fig. 166.

Window in the
Erechtheum at Athens.

§ 110. POLYCHROMY.—The Greeks were in the practice of painting their buildings in party colours in order to heighten the effect. This discovery has only been made by the researches of modern times, and it has not even yet been definitely settled in what way the colours were employed. This painting probably took place only in certain parts and details, in order to bring out the architectural form; as, for instance, in the case of mouldings, or in the frieze, to set off the sculptures. The temple, as a whole, appeared in the natural colour of the stone; and the artificial colouring, which was generally dark blue and dark red, though confined to subordinate

Fig. 167.



Part of a painted Doric Entablature.

details, contributed greatly to the general effect, as Fig. 167 attempts to portray. In buildings constructed of inferior material, or overlaid with stucco, a more extensive application of colouring was admissible.

The colours were always laid on in strong, unbroken tints; so that the painted parts were only stencilled in the simplest manner, without the introduction of light and shade.

The general conclusion may be arrived at, that colouring was very sparingly employed on the plastic and ornamented architectural details, but more lavishly on the plainer parts. Colours seem always to have been used in the Doric order, especially in the earlier period; at any rate, the most frequent examples of colouring are met with in that order, whilst it was less often employed in the Ionic, and certainly very seldom in the Corinthian.

§ 111. *Buildings of various kinds.*—The columnar construction which was first of all developed in temples, was also similarly employed in buildings of another description, whenever it was desirable to stamp an artistic impress on them. This columnar construction may, in fact, be said to embrace the whole field of Grecian architecture.

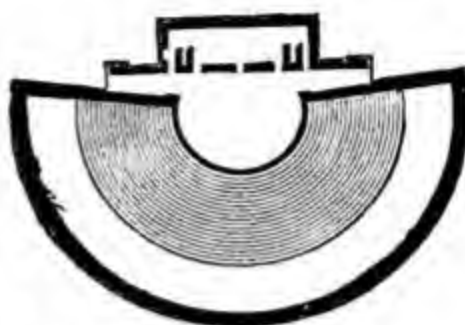
Amongst these buildings, those intended for the drama and for gymnastic and musical contests occupy an important place. In their construction, however, more attention was paid to their utility and object than to mere show. These were—

The Stadium—intended for gymnastic exercises, especially for racing, was of an oblong shape. Similar to this, but on a more extensive scale, was the hippodrome for chariot races.

The Theatre—of a semicircular shape (Fig. 168). That part in which the chorus danced and sang was called the orchestra; behind this, and facing the audience, was the stage for the performers who took part in the drama; the back of the stage being filled in by a permanent architecturally decorated scene.

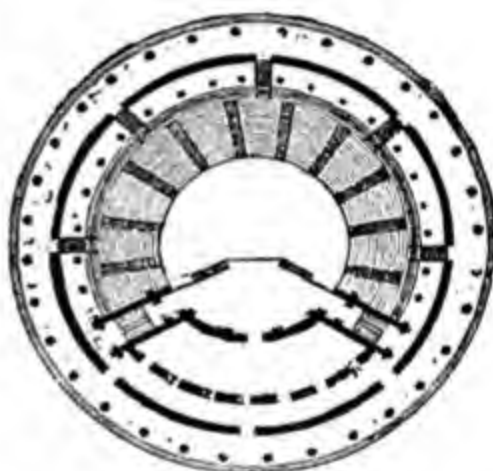
The Odeum (Fig. 169), for musical performances, resembled

Fig. 168.



Ground-Plan of the Theatre at Jassus.

Fig. 169.



Odeum at Athens.

Fig. 170.



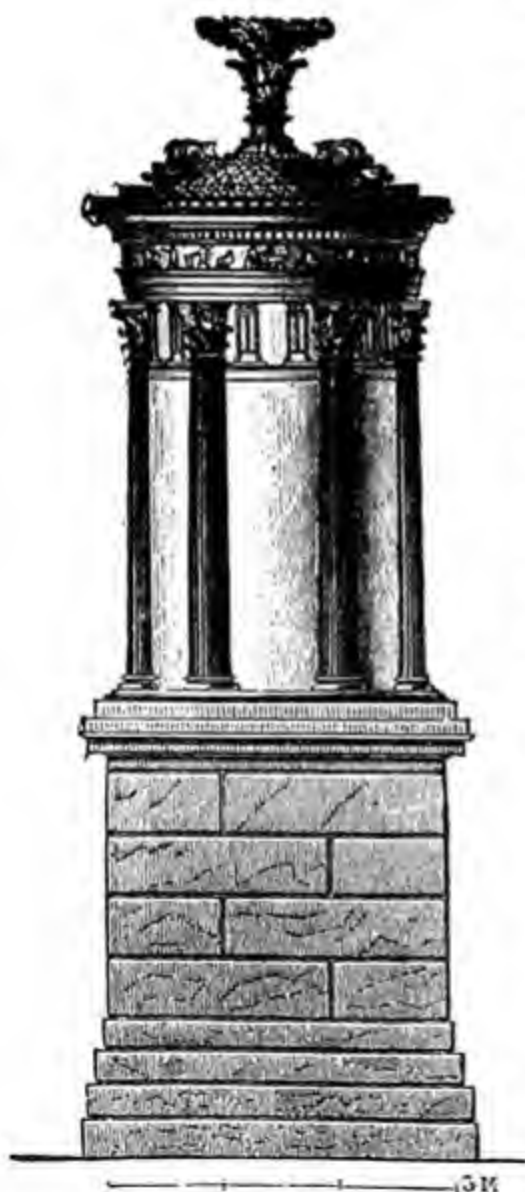
Upper part of a Stele.

the theatre, but was on a smaller scale, and roofed over in order to enhance the acoustic properties of the building.

For both the last-mentioned classes of buildings a suitable position was selected on the slope of a hill, so that the tiers of seats for the spectators were easily introduced, whilst at the same time there would naturally be in most cases the pleasure of a beautiful view, and a splendid background for the scene. Although this kind of building was not by any means devoid of ornament, still artistic architectural

details could, owing to the nature of the position, be but sparingly introduced; the upper row, however, was generally surrounded by a portico.

Fig. 171.



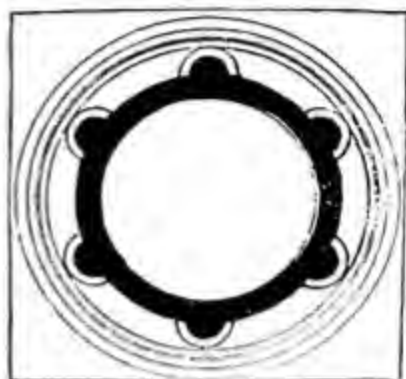
Monument of Lysicrates.

§ 112. The tombs were, as far as we know, for the most part plain and simple, and were called stelai, or pillars. They were capped by an enrichment resembling an acroterion (Fig. 170), with a simple sculpture in front, or a block of a shape similar to an altar. Sometimes the tombs were rock-grottos, with an architecturally decorated façade. In the later period, they were sometimes erected of colossal proportions and with considerable artistic magnificence. To this class belongs the Mausoleum, which was erected at Halicarnassus, in Asia Minor, to Mausolus, by his wife Artemisia. This was a pyramidal structure, more than a hundred feet high, and surmounted by a quadriga resting on a square pedestal.

Of a less ambitious class were

those monuments erected in honour of the victorious choragus in musical competitions. In these structures the tripod, as the reward of victory, was borne in mind. An instance of this style of building is preserved to us in the choragic monument of Lysicrates (Figs. 171 and 172), which was formerly known under the name of the Lantern of Demosthenes, and in that of Thrasyllus, both of which were erected in the time of Alexander. The former is a particularly graceful structure (Fig. 173), enriched with original and elegant sculpture, and executed in a free Corinthian style.

Fig. 172.



Ground-Plan of the Monument of Lysicrates at Athens.

Fig. 173.



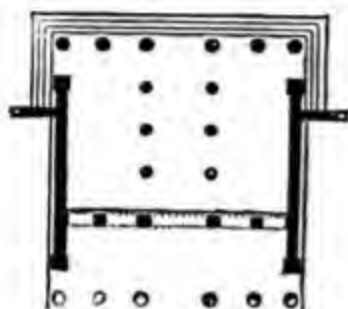
Finial of the Monument of Lysicrates at Athens.

§ 113. Of other noteworthy structures, the Propylæum was that which most nearly resembled the temples, especially as regards the

exterior, and these buildings formed a sort of gateway to those sacred edifices.

There were, moreover, basilicas, or halls of justice, and public

Fig. 174.



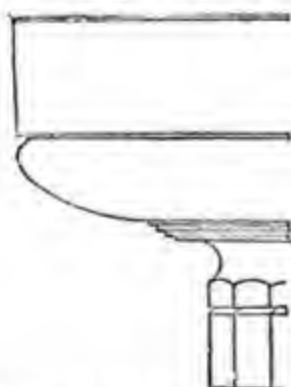
Ground-Plan of the
Propylæum at Eleusis.

porticos; the former having two rows of pillars in the interior, like the hypæthral temples (*see* Fig. 83), and the other for public traffic, with only one row of columns. In both cases the interior space probably remained open at the top.

There were, besides, gymnasia for bodily and mental exercises, with courts adapted to the purposes for which they were intended. Here again porticos formed the chief embellishment, as they did also in

private dwelling-houses, in the construction of which splendour and magnificence were probably not introduced before the time of Alexander the Great. A main hall, around which were grouped rooms for the men and smaller pillared halls, with the women's apartments behind, were the main features of these houses. The chief rooms in these dwelling-houses bore names according to their different arrangement, such as Corinthian halls, with a simple row of columns in front of the walls; Egyptian halls, with two rows of columns, one above the other, so that the upper formed a kind of gallery; and Cyzicum halls, resembling a summer-house.

Fig. 175.

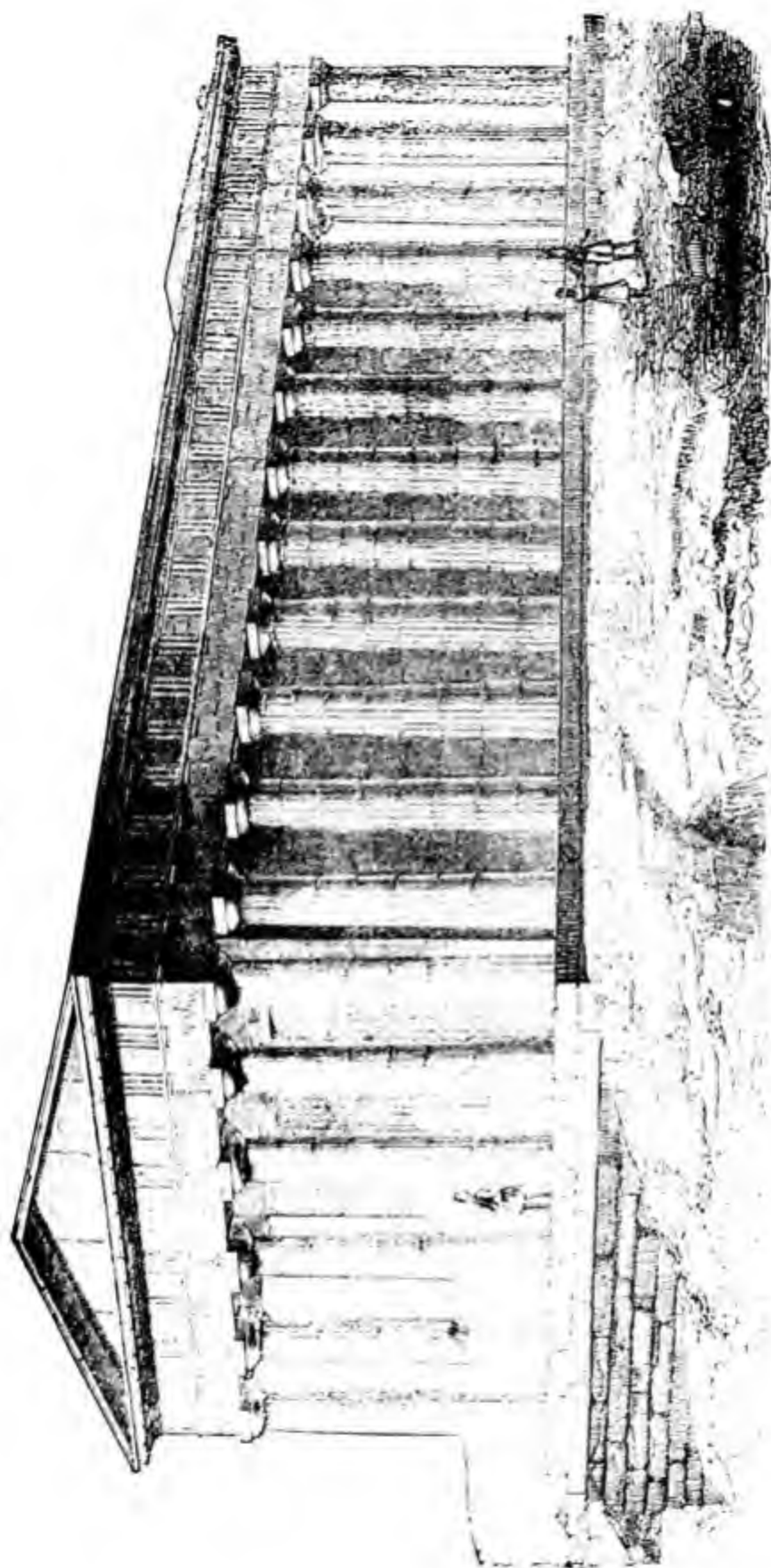


Profile of the Capital in the
Western Temple at
Selinuntum.

§ 114. *Of the most important monuments which have been preserved.*

No monuments of Grecian architecture of the period of development before the era of Pericles have remained till our times. Of the second period of Grecian art we have the monuments of Magna Græcia and Sicily, which do not, it is true, belong entirely to the previous epoch, but in which the ancient style was retained longer than in the Peloponnese, and which therefore form a distinct class apart. The capitals of the column, particularly, are essentially dif-

Fig. 176.

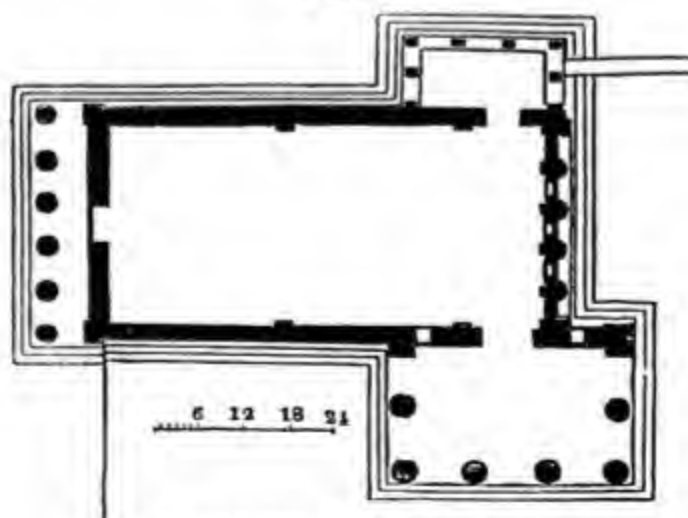


View of the Temple of Theseus at Athens.

ferent, owing to the great prominence of the echinus giving a marked projection to the whole profile, as well as to the trochilus below, into which the flutings of the shaft run (Fig. 175). The monuments of Asia Minor also are different from those of Greece proper. The temples at Selinuntum, Agrigentum, Egesta, and Syracuse are amongst the most important of the monuments of Sicily.

In Magna Græcia, the most important monuments are the temples at Pæstum, which are in a good state of preservation. In Greece proper, the temple of Minerva, at Ægina, is the best specimen of the few monuments which have come down to us. To the third period, when Grecian architecture attained its zenith, belong the most remarkable monuments at Athens, amongst which may be mentioned the temple of Nike Apteros, of the Ionic order; a similar temple on the Ilissus; the so-called Doric temple of Theseus (Fig. 176), which is one of the best as regards the state of preservation; and above all, the Parthenon, or temple of Athenæ. This building, which belongs to the time of Pericles, was built by Ictinus and Callicrates, and is a Doric periptero-hypæthral temple, with eight columns in front and seventeen at the side, and is 101 feet broad, 227 feet long, and 65 feet high. The construction is a specimen of the highest perfection of the Doric style, as are also the Propylæa, a magnificent gateway, which led to the height of the Acropolis, or royal citadel, on which

Fig. 177.



Ground-Plan of the Erechtheium.

the Parthenon stood. These Propylæa form, both from the exterior and interior, hexastyle Doric prostyles with five passages, in front of which are externally Doric, and internally Ionic, columns, and at their sides are wings with pilasters in antis. The whole, which corresponds exactly with the Parthenon, is executed in the purest possible style (Fig. 176. View of the Temple of Theseus at Athens.) Belonging to the time immediately after Pericles is the Erechtheum. (Figs. 177 and 178). This is a double temple in the Ionic style,

Fig. 178.



The Erechtheum, or Temple of Minerva Polias, with the Pandrosium.

dedicated to Minerva Polias, and is situated on the Acropolis. It has a hexastyle Ionic prostyle. A low building adjoins it, behind which is the shrine of the Nymph Pandrosos. This temple exhibits the Ionic style in its highest splendour and elegance. Lastly may be mentioned, in the Peloponnese, the temple of Zeus, at Olympia, and that of Apollo Epicurius, at Bassæ.

VI.

ETRUSCAN ARCHITECTURE.

§ 115. IN remote antiquity, Italy was inhabited by nations which belonged to the same Pelasgic stock from which the Greeks had sprung. As time, however, rolled by, a complete alienation took place. Subsequently, the Etruscan people spread over middle Italy, and acquired considerable importance. The most flourishing period was about the time of the founding of Rome, and during the centuries immediately succeeding that event. It was this race, endowed with artistic perceptions, which satisfied the first architectural and artistic requirements of the Romans till the time came when a Grecian taste was introduced amongst them.

Our information regarding this race is very scanty. Though probably of Northern origin, after it had adapted itself to the Pelasgic culture, which came ready to hand, it displayed in the latter period of Etruscan art affinity for everything Grecian; a fact which is especially exemplified by its works of art, in which Greek myths are frequently represented. Although, however, Etruscan art seems to approach the Grecian in its general architectural method, yet at the same time it preserved at all periods its own peculiar character, which may be traced perceptibly even in the last days of its existence, which was protracted as far as the first century after Christ.

The artistic worth of this people is especially displayed in their material and mechanical productions, whilst, on the other hand, their perception of the ideal was more limited.

§ 116. The oldest monuments of Etruscan architecture are the remains of the town walls, which were constructed of enormous blocks of stone laid one at top of another in horizontal layers. These walls were sometimes formed of polygonal blocks, and at others of blocks hewn into an oblong shape. The construction was precisely similar

to the Cyclopean walls which have been alluded to in Section 62, when Grecian architecture was being treated of, and appears to have, been peculiar to races of Pelasgic origin. The walls of Volterra Fiesole, Cortona, Rosella, and Populonia are instances of the hewn oblong blocks being used, and are consequently to be considered as demonstrating that the Etruscans had already made an advance in Pelasgic art. The country of the Sabines and Latins, to the south of the Tiber, is, on the contrary, rich in specimens of walls constructed of irregular polygonal blocks in the ancient Pelasgic style whilst in Etruria itself some examples have been preserved.

§ 117. In these Etruscan buildings traces are to be found of the arch; * as, for instance, in the Gate of Volterra and other gates at Perugia (Fig. 179); so also in the Cloacæ at Rome, of which the Cloaca Maxima (Fig. 180) is 20 feet broad. These are sewers

Fig. 179.



Etruscan Gate at Perugia.

Fig. 180.



The Cloaca Maxima at Rome.

which were intended to render the marshy district between the hills of Rome inhabitable. They were constructed in the reign of Tarquinius Superbus, at the beginning of the sixth century B.C.

The assumption which has hitherto prevailed, that the Etruscans

* The semi-circular vault is constructed of wedge-shaped stones, called voussoirs, broader at the top than at the bottom, and arranged with a continuously increasing inclination from the impost to the key-stone, which is kept firmly in its position by the pressure of the other voussoirs.

were the first to employ the arch, has been confuted by the excavations in the Assyrian ruins, as has been shown in the section that bears reference to this subject.

Dome-like shapes also occur in another description of Etruscan monuments, which resemble the Grecian treasure-houses; but those arches are only apparent ones, as they are formed of horizontal layers of stone projecting one over the other (*see* Section 64 in Grecian Architecture). Under this head may be mentioned the conical buildings in Sardinia, called Nuragghi, or Noraghe, which are from 30 to 50 feet high, and contain circular or oviform chambers, where the construction is of the description which has just been alluded to.

§ 118. In their temples, however, the Etruscans did not employ the arch, as is manifest from the lucid description of Vitruvius. This writer must be considered as the only authority on the subject, as no Etruscan temple has been preserved, and the representations of them which occur on tombs are not calculated to lead to any conclusive idea. According to Vitruvius, the Tuscan order (*see* Roman Architecture, Section 128) was copied and formed from Etruscan architecture. The form of their temples differed in the following respect from the Grecian, that while the ground-plan of the latter was oblong, that of the Etruscan temples approached nearer to a square, the sides being in the proportion of 5 to 6.

The interior of these temples was divided into two parts, the front portion being an open portico resting on pillars, whilst the back part contained the sanctuary itself, and consisted of three cellæ placed alongside one another (Figs. 181 and 182). The intercolumniation was considerably greater than in Grecian temples.

Fig. 181.

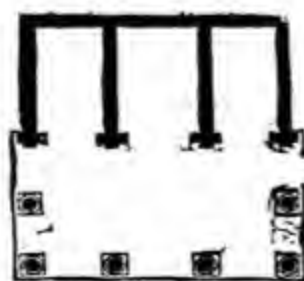


Fig. 182.



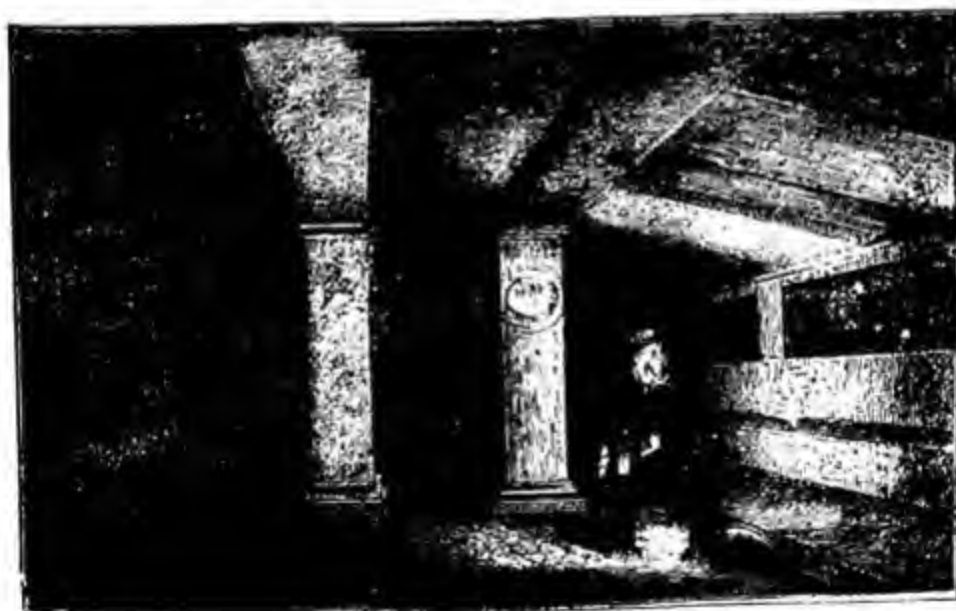
Ground-Plan of Etruscan Temples.

The columns resembled the Doric, as they were simple, but they were more slender than the columns of that order, being about seven times the diameter, and, moreover, they had a base. The height of the columns was generally a third of the whole breadth of the building; consequently the whole extent of the intercolumns was about equal to the height of the four columns which formed the façade. Owing to this wide intercolumniation, beams of wood, and not of stone, must have been employed for the architraves. The cross-beams projected a quarter the height of the pillar, and supported a very prominent roof.

§ 119. The most interesting monuments of Etruscan architecture which have been preserved are the tombs, and these have only quite lately been discovered.

They are for the most part chambers hewn in the rock, and supported by square piers. Their roofs are either flat or slope like a gable, and sometimes, but rarely, assume a vaulted shape: they represent imitations of wooden rafters or stone panellings (Fig. 183).

Fig. 183.



The tombs were either subterranean, and had an entrance façade hewn out of the rock, or they assumed the shape of tumuli (Fig. 184), which had one or more conical elevations resting on a superstructure. As a specimen of this construction may be mentioned a tomb at

Albano, known under the name of the Tomb of the Horatii and Curiatii, which has five such superimposed cones. Sometimes these tombs are quadrangular with a pyramidal superstructure (Fig. 185),

Fig. 184.



Fig. 185.



Etruscan Tomb at Castel d' Asso.

Fig. 186.



Fig. 187.



Profiles of Etruscan Tombs.

and were either free all round, or appeared as façades to rock-tombs. The latter have a mock door, the real entrance being effected under the foundation of the façade, and covered over with earth. Figs. 186 and 187 represent the profiles of Etruscan tombs ; and these, in the dearth of monuments of every description, must be considered as sufficient to convey an idea of all that is known on the subject.

VII.

ROMAN ARCHITECTURE.

§ 120. ART amongst the Romans sprang originally from foreign elements, and was fostered and developed thereby.

The reception and application of Etruscan art formed its first basis; and subsequently, in the time of the Scipios, the taste for Grecian art was mingled with it; when, owing to their contact with the Greeks, the Romans began to take an interest in Grecian architecture, and to admire the structures of Greece and Macedon. Greek architects were soon introduced into Italy; and thus Roman architecture, like all Roman art in general, conformed as nearly to the Grecian as the Roman genius permitted it to do.

This Roman genius, however, brought about the retention, particularly in architecture, of many peculiarities, by which Græco-Roman is essentially distinguishable from Grecian.

§ 121. Scarcely any distinctive epochs are to be traced in the Græco-Roman style during its palmy days, as long as its productions steadfastly continued to be of the same type. This period began with the last century of the Republic, and reached its culminating point under Augustus, who may with justice be said to have turned the city of brick, which he found on his accession, into a city of marble; for under his government the most remarkable buildings of Roman architecture, such as the amphitheatres, the basilicas, and the Pantheon, were erected. This palmy period of Roman architecture, as of arts generally, continued during the reign of the earlier Cæsars. In the time of Titus essentially Roman peculiarities became even more prominent, without producing an unfavourable effect on the general impression. During the succeeding century the emperors strove zealously to outstrip one another in the magnificence of the buildings

which were erected. In the time of Hadrian, in spite of his love of art, an increase in material elegance drove the spiritual element more into the background. Little by little material luxury gained the upper hand, and the tendency to incorporate foreign elements increased; whilst sensibility to beauty of form was superseded by a taste for excess in ornamentation. The period of decadence begins with the time of the Antonines, and this result was partly brought about by the influence of foreign religions. This decadence kept on continually increasing till the fall of the Western Empire, and at the same time forms to a certain degree the conclusion of the whole spiritual life of the old world, and a boundary between that era and the centuries of Christianity.

§ 122. In this subdivision Roman architecture will only be considered during the period that it flourished; that is to say, from the time that it was no longer Etruscan, but through the acceptance of Grecian forms and mode of thought must be considered as Græco-Roman. During this period the seat of classical architecture was transferred to Rome, from whence it subsequently spread itself over the other countries of the world.

As has been already remarked in the preceding paragraph, the buildings which were erected during the first centuries of the Roman state are to be ascribed to the Etruscans. Either Etruscan architects were sent for to carry out these buildings, or the models were closely followed, which have been described under Etruscan architecture. The Romans themselves, possessing but little æsthetic perception, directed their attention more to the practical and useful; and it was when this proclivity had to be exercised that their national characteristics were most favourably developed. Whilst with the Greeks art was a matter of feeling, the Romans treated it more as a matter of understanding. But as new requirements arose, art necessarily found further extension, though a practical materialism still directed its expansion.

All the designs of the Romans bear a vast and magnificent impress, which is in exact accordance with the might of the Roman power, and which especially characterizes all their buildings. The manner in which this tendency was brought into action was simple and unconstrained. Whilst in the Grecian temples, which were generally

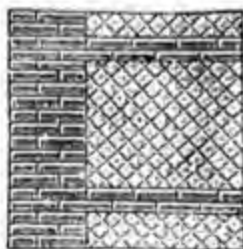
small, the impression of magnificence was conveyed by style, the same effect was produced in Roman buildings by proportion and dimension. It must here be remarked that the construction of the dwelling-houses, which only presented bare walls externally, must have heightened the effect of the public buildings, as they acted to a certain extent as a foil to the latter by their monotonous plainness.

If the Romans were unable to soar to a higher enthusiasm and to the ideal in the sphere of the fine arts, still, on the other hand, they reached a lofty pitch in technics. They knew how to treat all different materials as skilfully as they did the most varied methods of construction.

It is important here to understand clearly that hereby is meant no structural and organic combination of the arch with the Greek columnar construction, for the latter must be considered merely as an imposing decorative system, originating just as little as the other from the structure of the building, and therefore without any structural importance. Viewed independently, the columnar construction forms only the outside covering of the building completed in the rough, which might be at pleasure removed and replaced by another; whereas the removal of the decorative parts in Grecian architecture would have rendered the whole structure an impossibility.

§ 123. Amongst the various methods of construction must be mentioned the reticulated masonry (*Opus reticulatum*) (Fig. 188),

Fig. 188.



Opus reticulatum.

which is peculiar to Roman architecture; it is, however, beyond the general scope of the present summary of styles to allude to structural variations. This *opus reticulatum* consists of square cuneiform stones or tiles, with the broad ends facing outwards, and arranged in lines, which do not run horizontally, but intersect each other like net-work. The base and the corners of these walls consist of horizontal layers

of square-stone, and there are sometimes intersecting belts of the same kind of material in the middle of the network itself.

§ 124. Amongst all the forms which the Romans borrowed from foreign sources, the art of vaulting, which they learned from the Etruscans, was that which they most skilfully adapted and developed,

and rendered the most distinctive expression of the peculiarity of their own style.

Two modes of construction consequently appear side by side in Roman architecture, viz., the Italian arch and the Grecian column, both of which are combined in Roman buildings.

It is the arch especially which constitutes the most ingenious and original expression of Roman architecture, and which through its massiveness lays its powerful impress on that style, and furnishes it with its peculiar feature, particularly as regards the system of internal architecture. On the other hand, the column, as has been already remarked, is only an imported and foreign ingredient, which, when it occurs independently, does so in accordance with the Grecian architecture from which it was copied.

The employment of the arch exercised a great influence on the shape of ground-plans in general, and on covered spaces in particular. The Grecian manner of roofing by beams of stone or wood allowed only of simple ground-plans of small dimensions; consequently large spaces, which were intended to contain many persons, remained uncovered, and this construction was favoured by the climate. The arch, on the other hand, enabled the Romans to cover in large spaces by the simple means of brick and mortar. As a consequence, besides the arch itself, quite new plans, which were unknown to the Greeks, were carried out in the most magnificent way, especially in the baths and palaces, as will be described in subsequent paragraphs. Roman architecture has a superiority over the Grecian in thus independently having produced in peculiar and manifold ways these vast constructional designs, which have been retained as the recognised suitable forms for all similar spaces and buildings.

§ 125. The column then does not constitute, as it did amongst the Greeks, the most essential element in the structure of Roman buildings; it did not, however, fall into disuse, but was employed as a decorative detail, and imitated the Grecian column in its already more or less deteriorated shape. Simple styles, such as the Doric, which accorded so intimately with the whole disposition of the Grecian temple, and the Ionic, were but rarely used; whilst, on the other hand, the Corinthian order (Figs. 189 and 191) was extremely prevalent, for it corresponded to the desire for splendour and magnificence.

This order was employed, not, as among the Greeks, in small dimensions, but on the largest scale. The capitals of this order were constructed on an invariable model.

Fig. 189.



Corinthian Capital with Entablature from
the Pantheon at Rome.

Fig. 190.

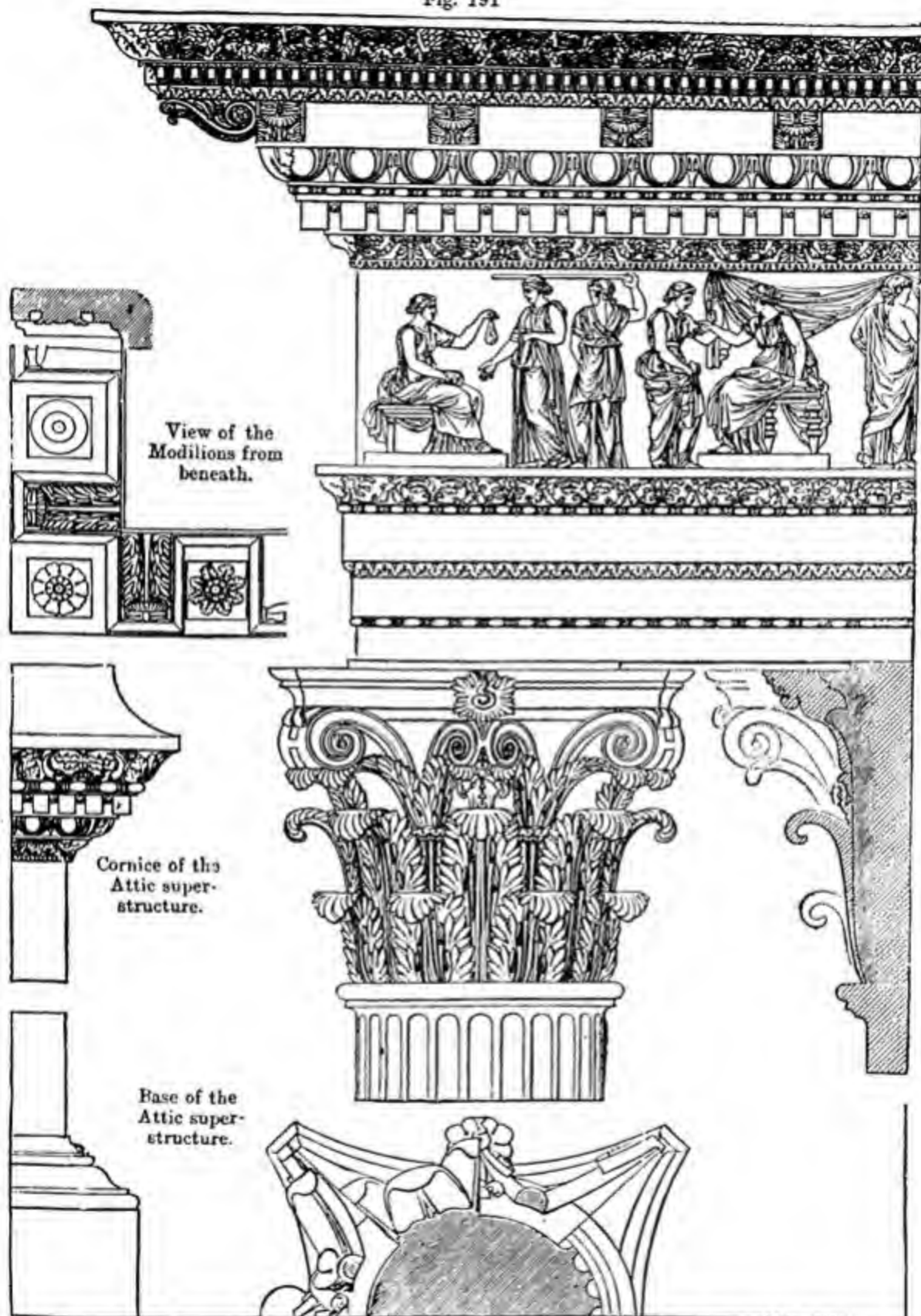


Corinthian Capital in Fig. 189 on
an enlarged scale.

The Roman capital (Fig. 192) also occurs, which even surpasses the Græco-Corinthian capital in richness. In this capital the massive Ionic volutes were introduced instead of the somewhat weak Corinthian tendril-shaped volute. In this way the capital deviates from its organic construction, but is in closer accordance with the massive style of the structures of which it forms part. The shafts were not always fluted, as was the case in Grecian architecture; sometimes they remained quite smooth, at others only the upper two-thirds of the shaft were fluted, the lower third remaining plain, or surrounded by astragals.

The entablature was, it is true, arranged in all the Roman orders in the same way as in the Grecian, but the mouldings were richer and more varied. Thus, for instance, the consoles or modillions of

Fig. 191



Corinthian Entablature with Capital from the Forum of Nerva at Rome

Fig. 192.



Half Roman-Corinthian Capital from the Triumphal Arch of Septimus Severus at Rome.

Fig. 193.



Profile of the Cornice in the Theatre of Marcellus at Rome.

the Corinthian were used in conjunction with the dentels of the Ionic order. (See Sections 98 and 102.) (Fig. 191.)

§ 126. The principal distinction between the Grecian and Roman columnar constructions lies in the form of the mouldings. By the Greeks the profile was fashioned in a lively, sensuous, and elastic sweep, while by the Romans it was constructed with more studied and regular curves, and being intended merely for decoration, did not give expression to any inner meaning.

§ 127. A further deviation of the Roman orders from the Grecian was that the columns and their bases were no longer placed directly on the foundations or surface of the buildings, but rested on an independent block of stone.

Half columns and pilasters with capitals and bases, though not of frequent occurrence in Grecian structures, were frequently used by the Romans, and form a usual embellishment of the exterior of buildings.

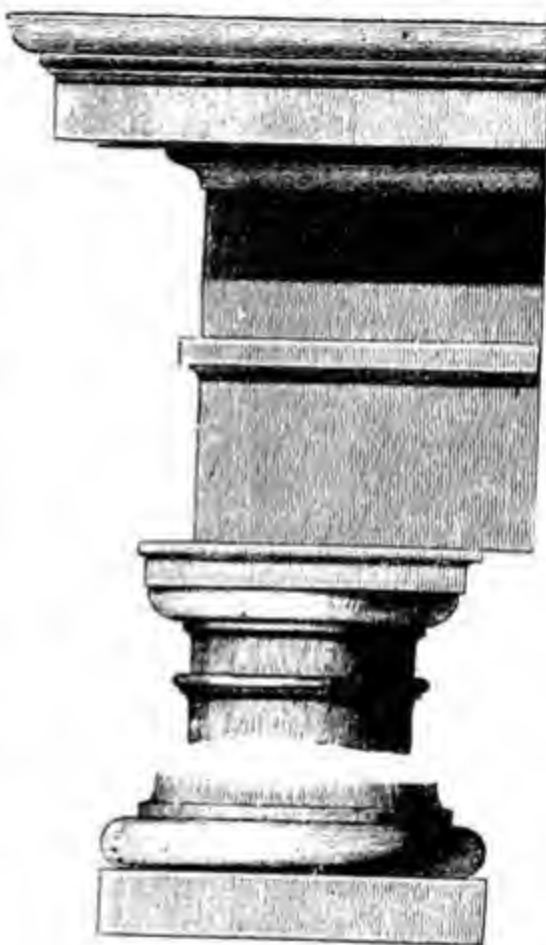
§ 128. Besides the three orders which were borrowed from the Greeks and the Roman composite order, the Romans also employed the Tuscan, which they had received from the Etruscans. They blended with it some elements of the Greco-Doric order, such as triglyphs and several mouldings of the entablature (Fig. 195); this order is consequently sometimes known under the name of the Roman-Doric.

The shaft was more slender than the Doric, and had a base consisting of a plinth and superincumbent torus, connected with the body of the shaft by a fillet. Although the capital had the same individual mouldings as the Doric, they did not project nearly as far.

§ 129. The only essential distinction between the so-called Roman order and the Corinthian is in the capital (compare Fig. 192 with Figs. 190 and 191), and in a richness of ornamentation and moulding which in the latter amounts to excess (Fig. 196).

§ 130. Without doubt many of the peculiarities of the Roman columnar construction were taken from Etruscan architecture, whilst the form of the Roman temples pointed to a Grecian admixture. These temples had no normal, universally accepted shape, but still it was a prevalent characteristic that the cella was a single one, and not triple, as amongst the Etruscans; while the ground plan in general approached closely to that of Grecian temples. Roman temples were not, however, surrounded by columns, but had only a portico (prostyle) in front of the entrance, consisting either of a

Fig. 194.



Tuscan Order, according to Vignola.

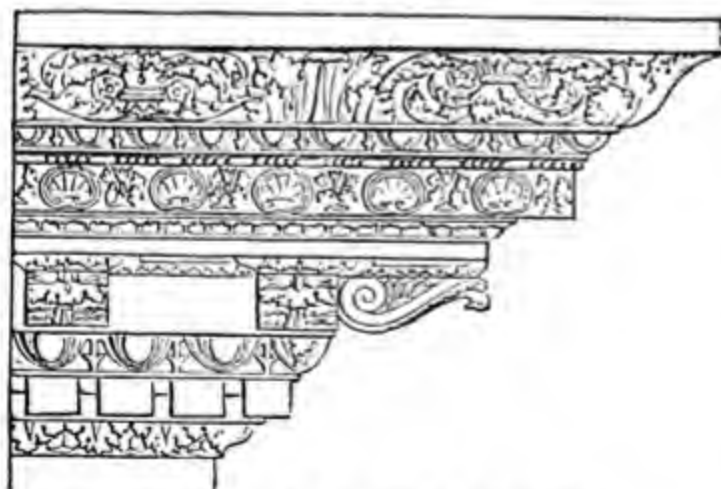
single or double row of columns. The other three sides were not surrounded by columns, as in the Grecian peripteral temples, but were

Fig. 195



Roman-Doric Order from the Theatre of Marcellus at Rome.

Fig. 196.



Cornice at the Thermæ of Diocletian.

isolated and compact character of the Grecian temple was never attained.

sometimes provided with half columns, corresponding to the columns of the prostyle. A flight of steps, therefore, led to the temple only on that side which was intended for the entrance, and this flight was flanked on both sides by a continuation of the basement of the side walls of the temple (Fig. 197). By means of this construction, which thus ran round the whole of the building, and by many other details, the bipartite appearance which Roman temples necessarily assumed, even from the exterior, by the abrupt separation of the cella from the portico, was to a certain extent counteracted, although the

§ 131. Besides this simplest form of Roman temples, in which the sides were either entirely plain or ornamented with half columns, after the time of the Macedonian wars, larger temples, with a colonnade extending all round the building, were constructed. The false architecture, with the above-mentioned half columns, was, however, at one time of very usual occurrence, and as examples during the best period of Roman architecture may be mentioned the Ionic temple of Fortuna Virilis at Rome, and the temple at Nîmes (Fig 198). The circular form was also occasionally employed.

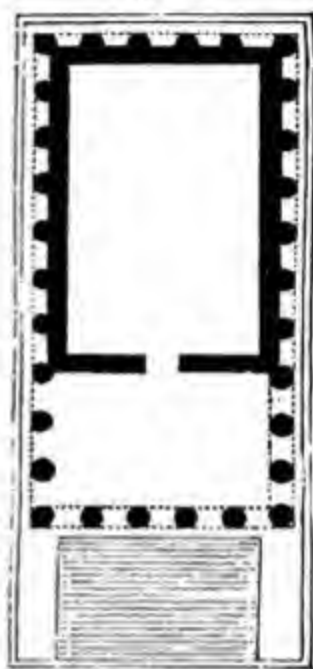
The tympanum or pediment rises over the portico at a greater angle, and is therefore higher than in Grecian temples.

Among other remains of prostyle temples are those at Pola, in Istria, and at Assisi; and the temple of Antoninus and Faustina at Rome. As a specimen of peristyle temples may be mentioned that of Mars Ultor at Rome, which is generally designated the temple of Nerva.

§ 132. Though the arch in later times was universally employed by the Romans, yet it is probable that at first it was only used for works of utility, such as cloacas, aqueducts, bridges, &c., which were less fitted for the realization and promotion of a higher form of beauty than for the perfection of technical skill. Still, in the above-mentioned works, their massiveness gave an opportunity for the expression of that vastness and solidity which characterized the Roman mind, which was favoured by the very fact that there was no longer any need for a close range of pillars, as the largest roofs could now be supported without them.

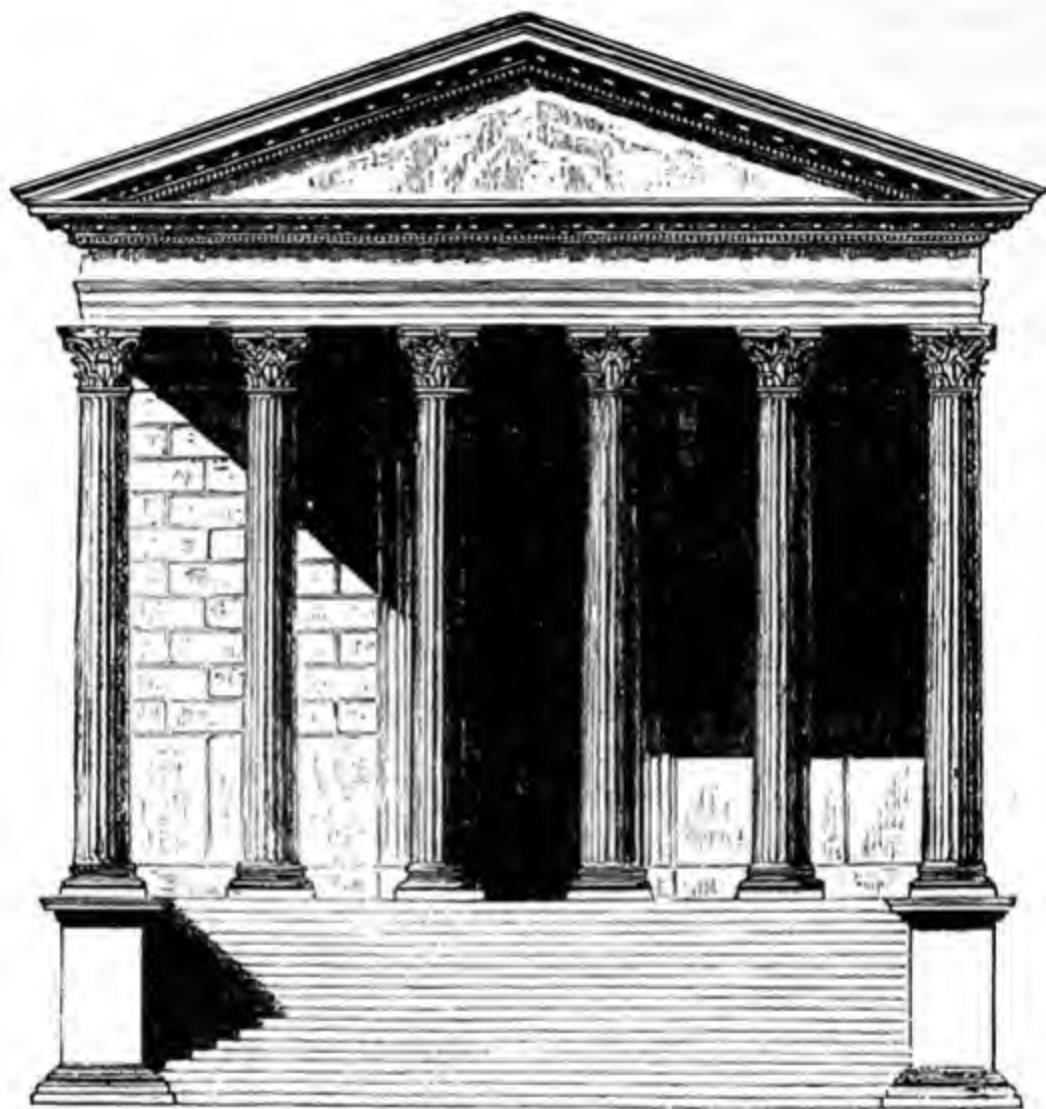
But at a subsequent period, when the desire for magnificence was joined to the appreciation of utility, it was the arch which gave its most peculiar impress to Roman buildings, and which alone rendered possible the construction of the various kinds of structures which will hereafter be described.

Fig. 197.



Ground-plan of the Temple at Nîmes.

Fig. 198.



Temple at Nîmes.

§ 133. Through the arch there sprang into existence a distinct internal Roman architecture with various applications of the semi-circle, as the design of the building demanded: such as the cylindrical arch (Fig. 199), dome arch (Fig. 207), and the cross arch (Fig. 200). The Romans were unable, however, to mould the arch-construction into a complete system, which should uniformly comprise the whole structure, and still less did they reduce it into an organic whole. Combining with it as they did the Grecian column, which was based on a horizontal architrave, their architecture necessarily consisted of two collateral and heterogeneous elements.

The arch was not, however, immediately connected with the column that supported it, inasmuch as the complete entablature of architrave, frieze, and cornice was retained, and the arch sprang from the top of it. Subsequently, when Roman art converged towards that of the Middle Ages, the original principle of continuous horizontal disposition in the interior was quite abandoned, the entablature being little by little increasingly interrupted over each column, till at last the cross arch sprang directly from it.

Many modifications ensued as regards the column itself, in consequence of its combination with the arch. The columns themselves differed in an arbitrary manner, according to the span of the arch, and were as a rule placed further apart, so that the beautiful perspective effect produced by the regular rows of columns was lost.

Another very essential deviation from the Grecian columnar construction

Fig. 199.



Cylindrical Arch

Fig. 200.



Cross Arch.

Fig. 201.

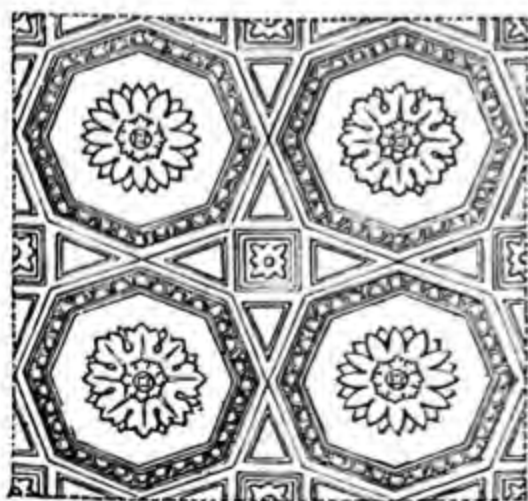
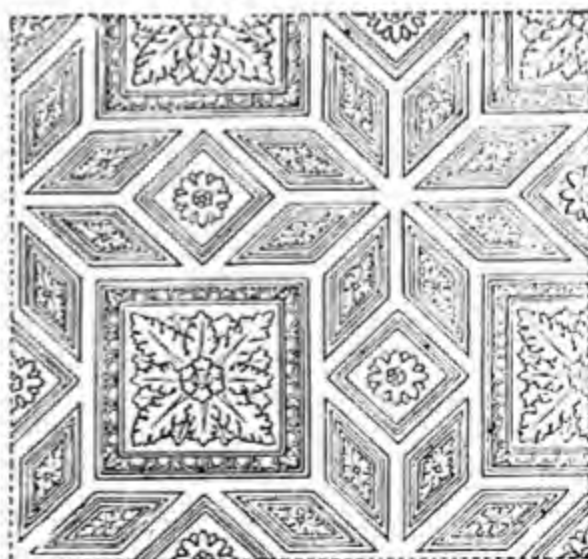


Fig. 202.



Parts of a Vaulted Roof ornamented with Panels.

consists in the fact that independent columns as well as half columns no longer rested immediately on the floor, but on a pedestal more or less moulded.

Projecting pilasters took the place of the Grecian *antæ*, and became complete counterparts of the column as regards capital, base, and fluting.

The flutes, which were such an important element in the Grecian shaft, are often entirely wanting in the Roman; sometimes the upper two-thirds are fluted, while the lower one-third is left plain.

The attic, which was a low storey above the entablature, and consisted of an order of small pilasters, must be mentioned as an entirely new element in columnar construction.

Fig. 203.

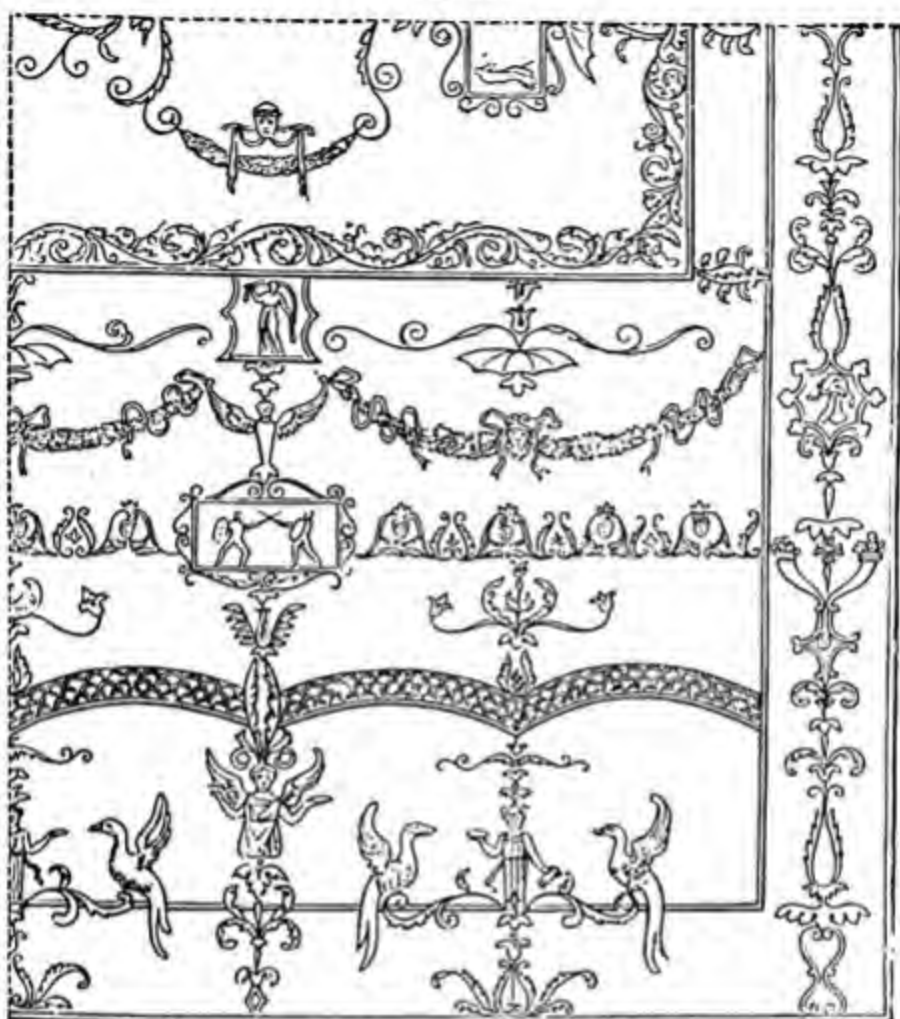


Part of a Vaulted Roof ornamented with Panels.

The arches were, as a rule, ornamented with sunken panels of various shapes, in which were introduced rosettes and coloured devices (Figs. 201, 202, and 203; *see also* Fig. 206); though sometimes the arch was smooth and covered with paintings.

Semicircular niches for the reception of statues were of frequent occurrence in the walls; and there was generally a large niche, with a vault above it, facing the entrance of the temple, and forming the termination of the building, which contained the image of a god.

Fig. 204.



Part of a Vaulted Roof ornamented with Paintings without Panels.

§ 134. It was in circular buildings that the vault found an especially practical application; and many of this description of structures are temples. The round shape was invariably employed in the temples of Vesta; and though that goddess was essentially an Italian divinity, yet Grecian columns were introduced as in other temples.

Since the Doric order, on account of its rectilinear severity, and the Ionic, on account of the variety between the two sides of the capital, were less suitable for circular buildings, recourse was had to the Corinthian order, although this, too, on account of its square base and plinth, was not in conformity with a circular construction.

Of these column-surrounded temples of Vesta must be mentioned

that at Tivoli and that at Rome, the first of which is particularly noteworthy by the beauty of its details. The most important and

Fig. 205.



Façade of the Pantheon at Rome.

Fig. 206.



View of the Interior of the same.

most beautiful of circular buildings without columns surrounding it is the Pantheon at Rome, which was completed in the reign of Augustus, in the year 25 A.D. (Figs. 205, 206, and 207).

§ 135. This construction of arches and vaults did not, however,

Fig. 207.

Ground-Plan of the Pantheon
at Rome.

remain confined to the interior of buildings, but imparted its own expression to the architecture of the exterior also; for the shape of openings became circular instead of square, although they were surrounded by half-columns or piers, and an entablature running along over the top of the half-columns gave a rectilinear finish to the whole (Fig. 208).

§ 136. A consequence of the combination of Grecian forms with the massive arch construction was, that all the details necessarily became correspondingly heavier and fuller; for the more graceful Grecian details would no longer have produced the desired effect in the composite Roman structures. This fact explains why in columnar buildings where the arch was not

Fig. 208.

Part of the Architecture of the
Colosseum at Rome.
Compare entire View, Fig. 227.

employed, the altered details, nevertheless, found acceptance, owing to being prevalent in other structures.

Another consequence of this combination was, that the forms of the Grecian columnar construction, which arose from the respective proportions of its parts and from intrinsic necessity, lost their meaning through their conjunction with the arch, and were no longer employed in accordance with natural laws, but arbitrarily, although many æsthetic reasons justified the manner of their employment.

This is, for instance, the case, when, as Fig. 208 shows, the arch is surrounded by half-columns, in which the objects attained seem to be that of satisfying the eye through richness of form, and by the variation of circular and straight lines, and that of surrounding the outline of the arch by a rectilineal framework, which, in an æsthetic point of view, has a satisfactory effect. But although these results are obtained, yet the architecture of the whole column, as well as its details, no longer retain their original constructive meaning and their intrinsic necessity. The architecture of the column consequently sinks to a mere accessory based on arbitrary principles, since its only constructive purpose, namely, to strengthen the walls and to serve as a buttress, whether real or apparent, to the arch, is not really fulfilled to the extent proposed.

But the difference between Roman and Grecian details does not merely lie in the extinction of meaning, but also in the inorganic nature of the various forms and of the ornamentation of the individual mouldings; for the elegance and the keen appreciation of the

Fig. 209.



Frieze Ornament from the Frontispiece of the Temple of Nero, at Rome.

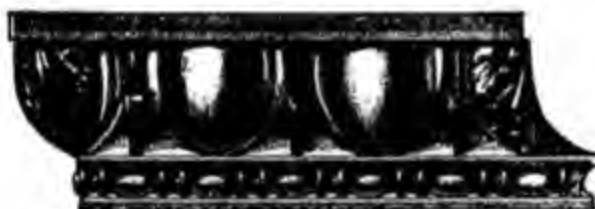
beautiful which the Greek possessed was wanting in the Roman. Whilst appreciation and love of art exercised a very great influence on the former, it was the love of magnificence which was the ruling principle of the latter; and if this taste did not influence the whole of Roman architecture, still a great change was effected in the

Fig. 210.



Cornice Ornament.

Fig. 211.



Roman Ovolo Moulding, with Pearl Beading.

Fig. 212 and Fig. 213. Ornamented Roman Astragal.



Fig. 213.



quantity and style of embellishments employed; because, as has already been mentioned above, the ornamentation had to correspond with the massive character of Roman architecture, and consequently became more massive and more copious itself. Figs. 209 to 215

Fig. 214.



Ornamented Cornice with Pearl Beading.

Fig. 215.



Richly Ornamented Roman Ovolo.

serve as illustrations of ornamented mouldings. Fig. 216 is an example of enrichment of which vegetable objects were the model.

Fig. 216.



Fragment of an Ancient Roman Frieze.

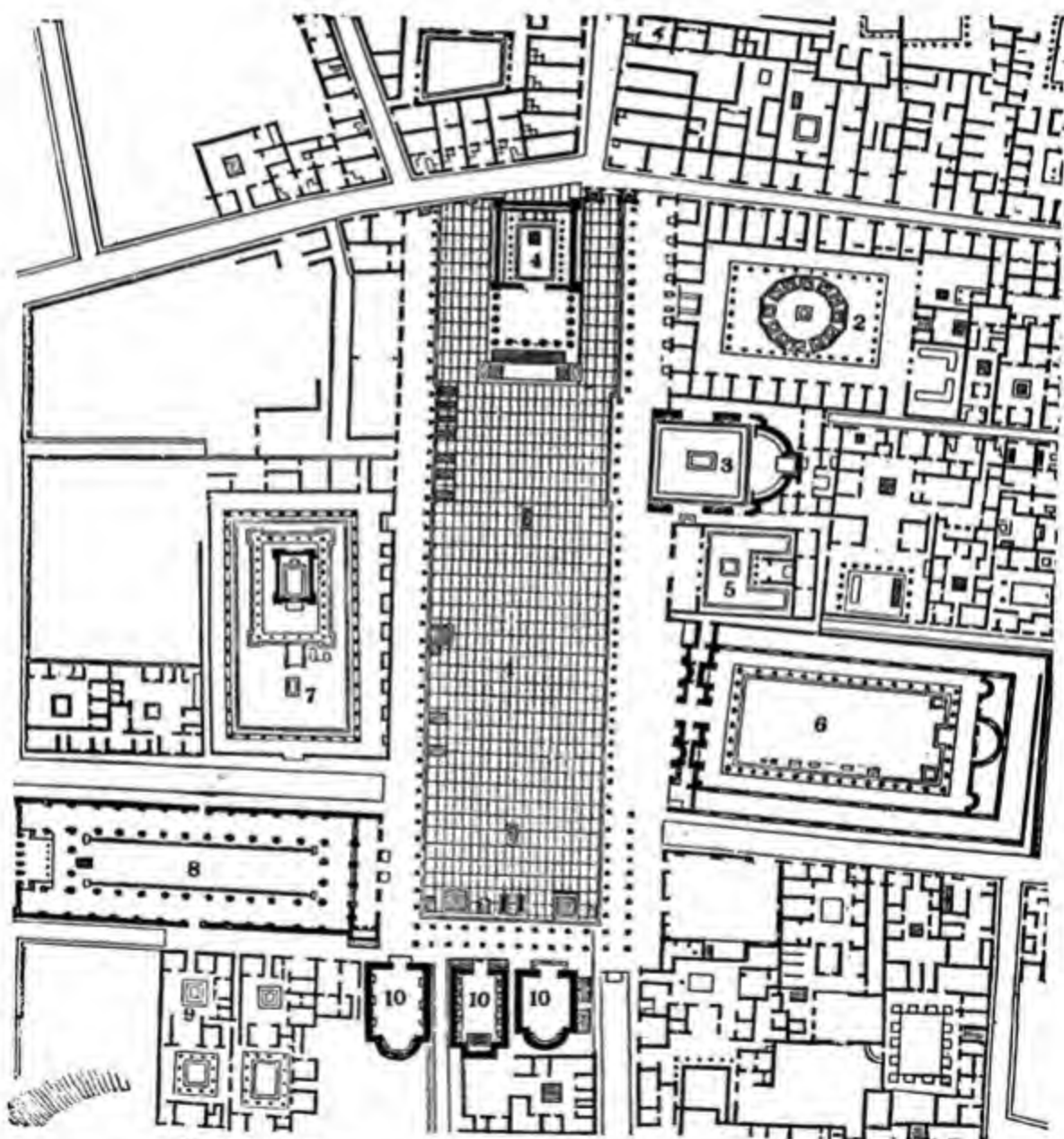
§ 137. Many other sorts of buildings besides the temples are met with amongst the Romans, which owed their origin partly to Roman nationality, and partly to a Grecian prototype, greatly modified, however, by the manners and customs of the Romans. Amongst these are :

§ 138. The Forum, which corresponded to the Greek *ἀγορά*, was not intended for commercial dealings, for which special markets were erected, but only for public transactions ; and consequently it was surrounded by columnar halls.

In Italy, these halls, on account of the extensive traffic, were constructed on a larger scale, and the Forum especially was made longer, because at an early period it was used at the same time for gladiatorial combats. Public buildings were connected with the Forum, as they were in Greece, such as temples, which often served at Rome for meetings of the senate, as also halls of justice, the treasury, the prison, buildings for the public archives, &c. The assemblies of the people were, when the Forum in Rome became too small for the increased population, held in the Campus Martius, which was for this purpose surrounded by porticos by Julius Cæsar and Augustus.

In course of time, various other forums were constructed, as those of Julius Cæsar, of Augustus, of Domitian, of Nerva, and above all, that of Trajan, which exceeds all others in richness, and on the site of

Fig. 217.



Plan of the Forum at Pompeii with the Buildings surrounding it.

1. The Forum, surrounded on three sides by a Colonnade. 2. The Pantheon. 3. Council-Hall of the Decurions. 4. Temple of Jupiter, close to the entrance-gate of the Forum.
5. The so-called Temple of Quirinus. 6. Chalcidicum and Crypto-portico of Eumachia.
7. Temple of Venus. 8. Basilica. 9. Granaries. 10. The three Curiae. 11. School of Verna.

which the column raised in honour of that emperor is still in existence.

But little has been preserved of all these forums. The ruins of Pompeii present a view of these structures on a small scale. We may gather from its existence at that place that even small country towns possessed a richly ornamented forum with halls and temples. Fig. 217 gives an idea of this structure, which was surrounded on all sides by public buildings and halls, most of which were of a splendid nature.

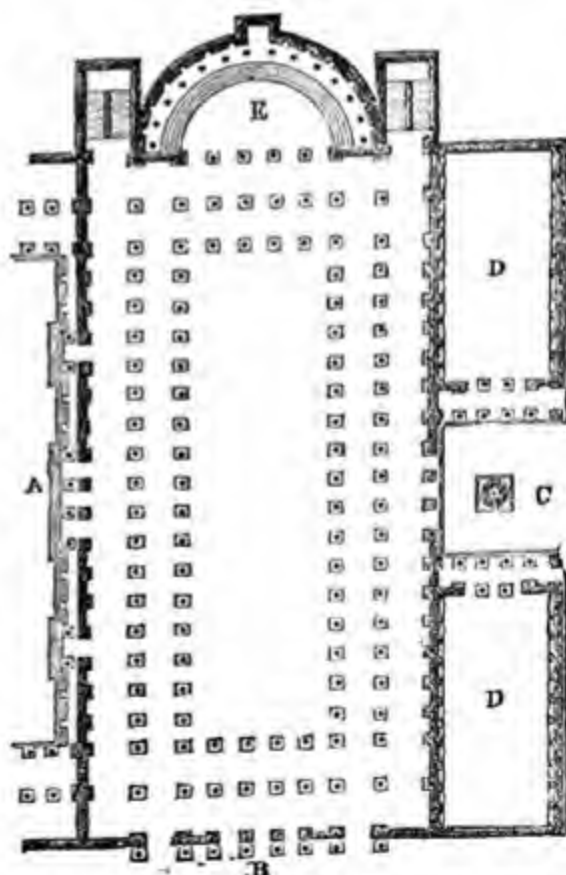
If the Forum at Rome bore the same proportion to that at Pompeii as that gigantic city did to the little country town, the structure must have been calculated to arouse an overpowering sensation of astonishment such as could be produced by no building of modern times.

In course of time special buildings were constructed for various public purposes, thus:

§ 139. The Basilica (Fig. 218 and No. 8 in Fig. 217)—which served for law proceedings and as a sort of Exchange for merchants. The Greeks also possessed similar buildings, which were called *στοάι βασιλικάι*, or kingly halls, and it was from the Greeks in this instance also that the Romans received their model.

The first Basilica is said to have been erected by Cato, and at the overthrow of the Republic as many as seven of them were already in existence, of which that of Paulus Æmilius was the most celebrated for its size and splendour.

Fig. 218.

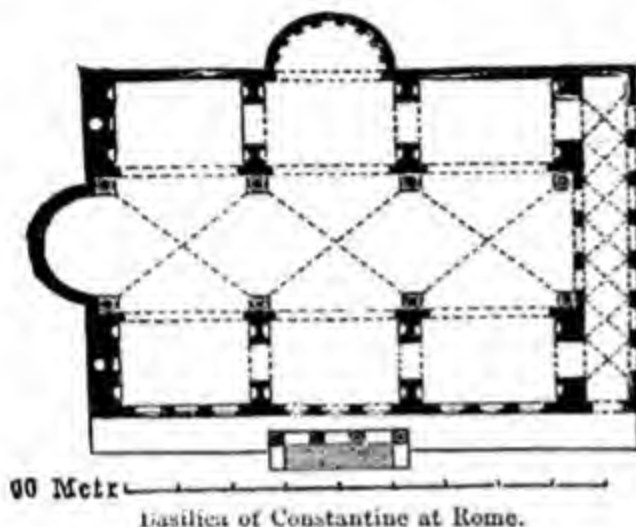


Ulpian Basilica in Trajan's Forum at Rome.

A. Main Entrance from the Forum. B. Entrance from the street. C. Trajan's Column. D. Greek and Latin Libraries. E. Tribunal for the Judges.

The shape of these buildings, which varied more or less according to requirements, was generally a covered hall, which was terminated at the further extremity by a large circular raised apse, in which the

Fig. 219.



quæstor or other magistrate presided. The hall consisted of a large central nave, which was surrounded on all sides by two aisles, each about one-third of the breadth of the central nave. These porticoes were generally two storeys high, whereas the central nave ran up to the roof, and sometimes was even left quite open. At a later

period of Roman architecture a modification took place in these basilicas, as is shown by the Basilica of Constantine, which is sometimes called the Basilica of Maxentius, by whom it was begun. (Fig. 219.) In this basilica the breadth has been increased at the expense of the length, and a cross-vaulted roof is supported by vaulting shafts.

§ 140. Triumphal arches form a class apart among the monuments of Roman architecture. It was an early custom for victorious generals to make a triumphal entry into the city, during which were displayed the spoils of war in the shape of arms, temple vessels, jewels, &c. In honour of the generals who were rewarded by a triumph, and in perpetual memorial of their exploits, richly ornamented triumphal arches were subsequently erected, which remained as a lasting ornament to the city. The custom of rearing these triumphal arches was by no means confined to Rome itself, but they were erected in recognition of other services that contributed to the public good, as is shown by numerous examples of this kind of structure, not only in Italy, but also in Greece, Spain, and France.

The shape of these arches resembles that of a city gate: a spacious and lofty semi-circular central arch, resting on an impost, and

surrounded by columns, half columns or pilasters, which support an entablature. Generally above there is a kind of upper storey, the so-called Attic, which crowns the whole structure, and which receives the explanatory inscriptions and statues. Larger triumphal arches had a smaller passage on each side, besides the main entrance. (Fig. 220.)

Fig. 220.



Triumphal Arch of Constantine at Rome.

The most rich and beautiful of these monuments which are peculiar to Roman architecture that have been preserved, are the arches of Septimius Severus and Constantine at Rome, which both have side-arches: and the latter being constructed of materials from an unfinished arch of Trajan, a considerable part is built in a better style than the other buildings of that age; that of Titus, also at Rome, with only one arch and half-columns, and with a capital that is the first instance of the Composite Roman order.

Worthy of notice out of Rome are the arches at Pola, in Istria, which belong to the Augustan period; further, those of less importance at Rimini, Aosta, Susa, and Orange.

§ 141. Allied to triumphal arches are pillars of victory. Although these were erected in Greece as monuments, yet they did not serve, as in Rome, for great public purposes.

The Columna Rostrata of Duilius is the first that is worthy of mention, which was erected after the naval victory over the Cartha-

ginians, in commemoration of which event rostra, or beaks of ships, were introduced into the ornamentation.

In the time of the emperors these pillars were constructed on an enormous scale, and were partly used to represent in relievè the deeds which led to the erection of the column. As instances may be mentioned Trajan's column, which was ninety-two feet high, and that of Marcus Aurelius, which is generally known as the column of Antoninus Pius. Both these columns belong to the Doric order.

§ 142. The tombs were sometimes caves hewn in the rock or subterranean vaults, adorned with painting and mosaics, in which the sepulchral urn of each individual for generations was deposited in niches excavated in rows along the walls, each urn having a small marble tablet, on which was written the name of the deceased. These sepulchral vaults were called *Columbaria*, and they sometimes had a sort of portal at the entrance.

The usual form of independent monumental tombs was a ponderous tower-shaped block, sometimes square, and sometimes round, with a quadrangular substructure; as, for instance, the tomb of *Cæcilia Metella* at Rome, which belongs to the time of Julius Cæsar, and which was used in the Middle Ages as a fortress, with battlements

Fig. 221.



Tomb of *Cæcilia Metella*.

added to it. (Fig. 221.) Further may be mentioned that of the *Plauti*, near *Tivoli*, and that of *Munatius Plaucus*, near *Gaëta*.

Others are found constructed on a smaller scale. Sometimes they are solid throughout, with only the passages that lead to the urn-chambers hollow, at others they are entirely hollow and vaulted. Square tombs of this description

are frequent in the environs of Rome, but in a very dilapidated condition.

§ 143. The monumental tombs of the emperors were constructed

on an immense scale, and with rich architectural decorations. First amongst these must be mentioned the Mausoleum of Augustus, which was a colossal circular building of four storeys, the lowest of which was 200 feet in diameter, and planted with evergreen trees: it then rose in terraces to the summit, on which was placed an enormous statue of the emperor. The interior contained hollow vaulted spaces. The inner walls having now almost completely disappeared, the space is used for public feasts and spectacles.

The Mausoleum of Hadrian, now known under the name of the Mole of Hadrian, or more frequently that of the Castle of St. Angelo, consisted also of a square basement which was 340 feet each way, over which rose a colossal circular tower of several storeys, the lowest of which was about 230 feet in diameter. On the top was a quadriga with a colossal statue of Hadrian. The exterior was richly decorated with columns and statues. The massive interior was only broken by a passage which led to the sepulchral chambers, of which there were two, one above the other. The lower portions of this mausoleum now form the Castle of St. Angelo.

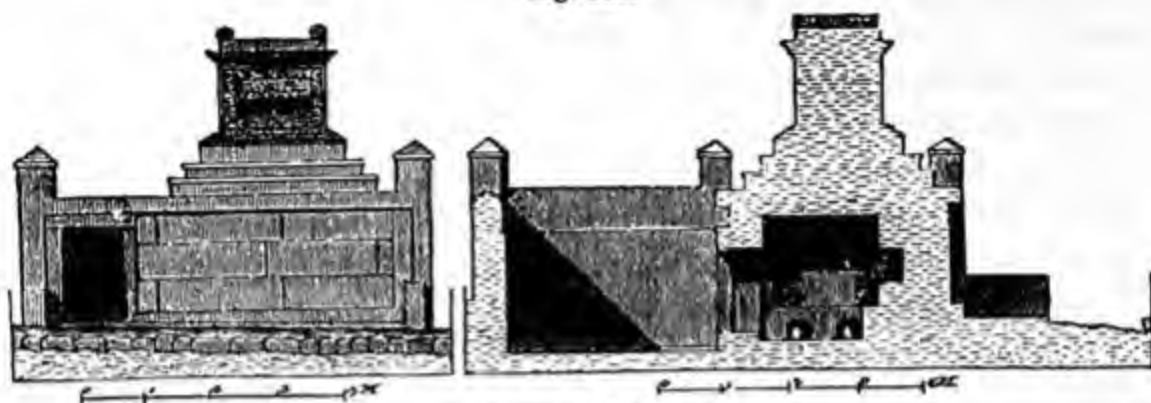
A similar monument at Rome, of which no traces now exist, was the Mausoleum of Septimius Severus, which was called the Septizonium, from the fact of its having been constructed in seven storeys.

Various other forms, besides the above-named, occur for monumental tombs: amongst others the Egyptian pyramid was employed, as is shown by the pyramid of Cestius at Rome, which belongs to the period of Augustus, and is 112 feet high. This monument is still in existence.

§ 144. For tombs of smaller dimensions various forms and abnormal decorations were employed. An ornamented erection of a shape similar to an altar (Fig. 222) or a temple, and resting on a solid sub-structure, is a by no means uncommon form. Many tombs are constructed like real temples, while others consist only of simple columns.

These tombs were generally erected in rows along the main roads before the entrance to a town, so as to form a street of tombs, an arrangement which is still to be seen at Pompeii. (Fig. 223.)

Fig. 222.



Tomb of Nævoleia Tyche at Pompeii.

Fig. 223.



Street of Tombs at Pompeii.

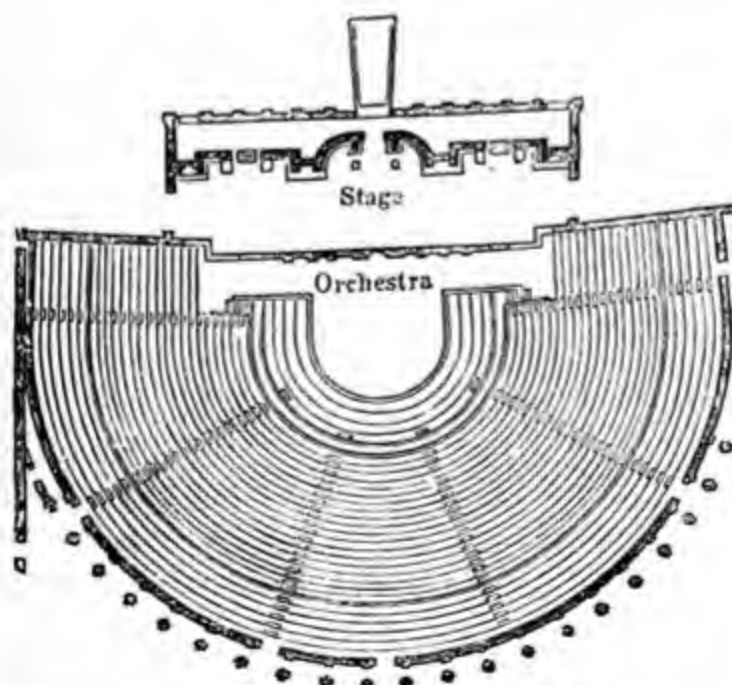
§ 145. Buildings for public games form an important class, and one that is peculiar to Roman architecture. The Greeks had, it is true, buildings erected for a similar purpose, and those of the Romans were constructed on the same principle. The Greeks, however, both in their dramatic and musical representations, and in the struggles of the Pentathlon, were satisfied with the mere enjoyment of artistic performances and emulation in feats of skill, and did not require any magnificent buildings to be erected especially for the purpose; and it is owing to this that no attention was paid to richness of architecture,

particularly as regards the exterior. As has before been stated, they selected a hilly site, with a suitable incline, and there they erected rows of seats for the spectators, either of stone, if intended to be permanent, or of wood, if destined to be removed at the conclusion of the games. The Romans, on the other hand, erected their structures on level ground, and built them in vaulted tiers one above another, with artificial and not natural support for the rows of seats (Fig. 225), so that the exterior with its piers and arches presented a very rich appearance. (See Fig. 228)

The main object, moreover, of the games at Rome was to employ and satisfy the great mass of the population. The combats of gladiators, as well as the fights of and with wild beasts, were always more popular than dramatic representations. The theatres were used for the latter class of performance, while the amphitheatres were the stage for the former. In later times *Naumachiæ*, or mock sea-fights, were instituted, which necessitated a still larger space, that had to be submerged previous to the representation. Lastly came the circus, or race-course, which resembled the Greek stadium and hippodrome.

§ 146. The theatre (Fig. 224) was essentially like the Grecian

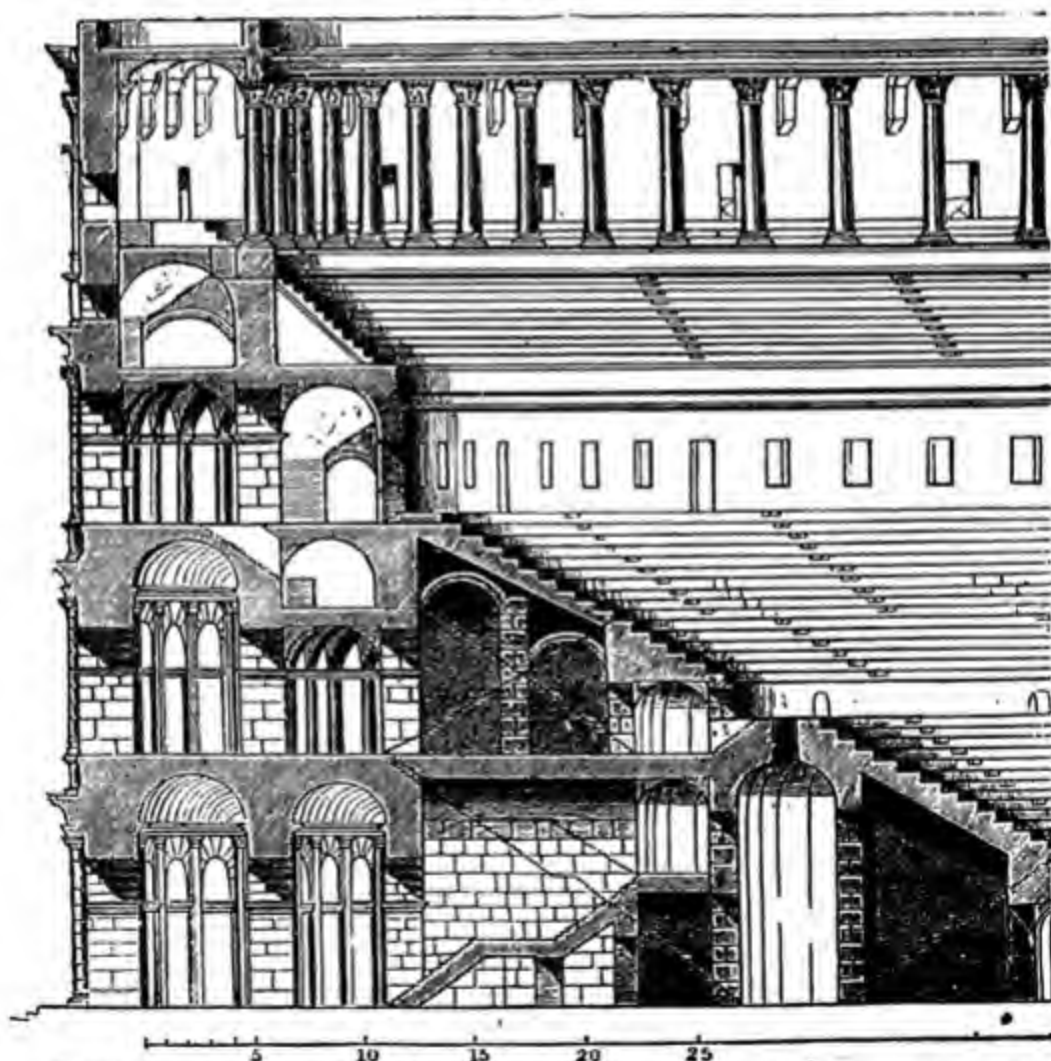
Fig. 224.



Ground-Plan of the Theatre at Pompeii.

in its arrangement; it formed a semicircle with seats rising in the form of an amphitheatre for the spectators, at the chord of which was the stage, with its permanent decorations. The orchestra, which was the space between the stage and the lowest tier of spectators, was employed by the Greeks for theatrical purposes, whereas the Romans turned it into seats for the senators. The topmost tier was generally crowned with a covered portico. The whole mass of the rows of seats was supported by a solid substructure (see Fig. 225) of piers and

Fig. 225.



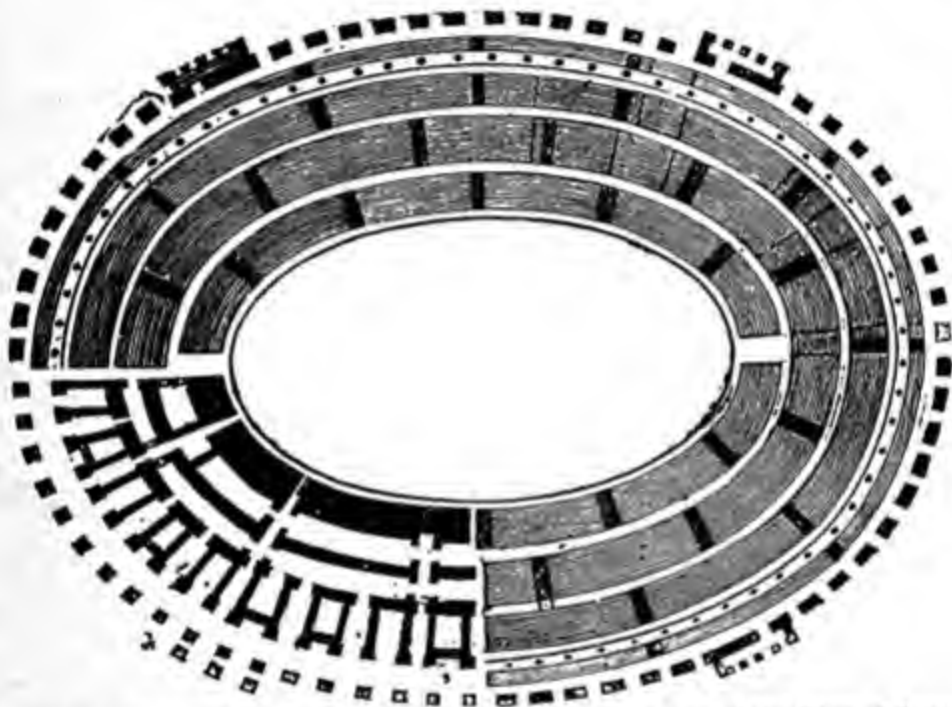
Elevation and Section of the Tiers of Seats and Substructure of the same from the Colosseum at Rome.

arches, which formed passages of three storeys one above another, retaining the circular form of the building; whilst externally they

formed arcades, which were surrounded with half-columns or piers with entablatures over them. The exterior of the straight portion of the building, which contained the stage and some chambers connected with it, was generally surrounded by a portico. The theatres were either open, or were protected against the sun and rain by an awning stretched over them.

§ 147. The shape of the amphitheatre was borrowed from that

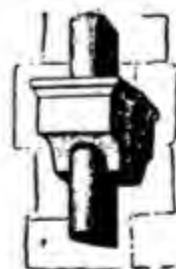
Fig. 226.



Ground-Plan of the Colosseum at Rome, with representation of the Tiers of Seats, and of the Substructure *a*.

of the theatre. Since no stage was necessary, and with a view to securing as many rows of seats as possible, the semicircular form of the theatre was done away with, and the whole became a circle, or rather an ellipse, which was afterwards the recognized shape for all buildings of this nature, whether at Rome or in the provinces. (Fig. 226). Probably this curve was preferred to the circle because a longer course was thereby secured for the combatants. The substructure and the exterior were arranged as in the theatre. In most cases the Tuscan order was employed in the lower parts of the structure,

Fig. 227.



Socket at the Colosseum for the Awning Pole.

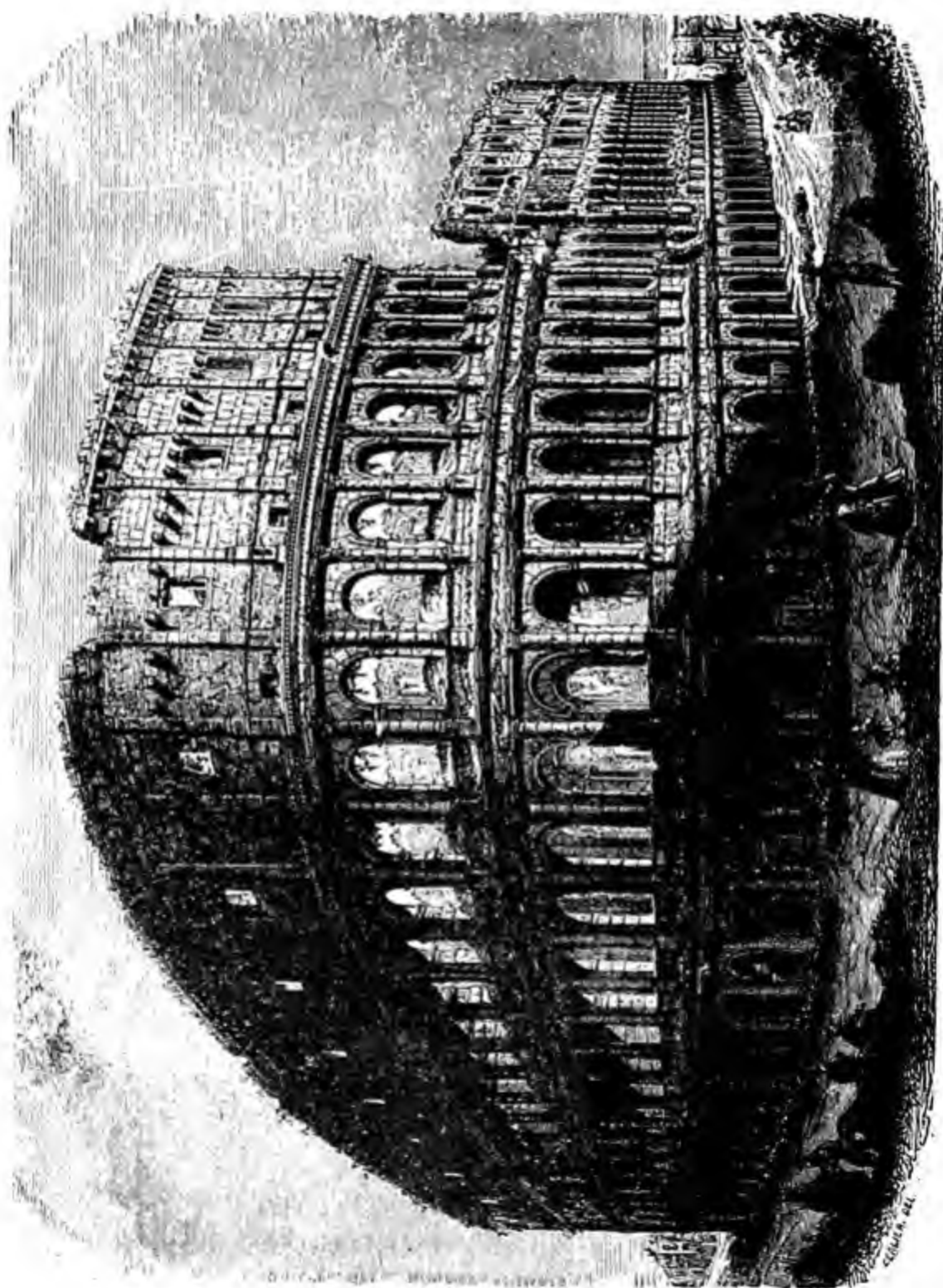


Fig. 228. Ruins of the Colosseum at Rome.

the Ionic in the middle, and the Corinthian in the upper. (Fig. 228.)

The foundation of the tiers of seats, consisting of radiating walls spanned by an arch, forms the essential constructive element in these edifices, whilst the external façade is only to be considered as an architectural casing, inasmuch as it could be removed without endangering the solidity and utility of these buildings.

The first ampitheatre was built of wood by Julius Cæsar, and the first stone one by Augustus.

§ 148. Amongst the many remains of theatres, of which the external walls are still in existence must be mentioned that of Marcellus, at Rome. This theatre was completed in the time of Augustus, and contained seats for 30,000 spectators. Probably this building formerly possessed a third storey. The far smaller theatre at Pompeii is in a much better state of preservation.

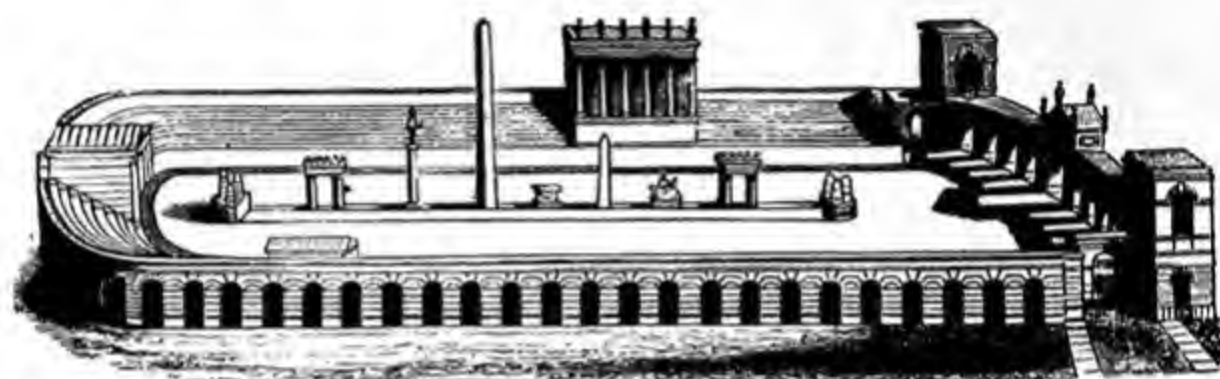
Several amphitheatres have been preserved to the present time ; amongst others may be mentioned those at Pompeii, Verona, Nismes, Pola and Capua ; but the Colosseum, the wondrous amphitheatre at Rome, surpasses them all. This structure contained seats for 87,000 spectators, and was 635 feet long, by 530 feet broad. Its height was over 190 feet ; it consisted externally of four storeys, each of the three lower of which contained 80 arches with half-columns, whilst the upper storey was a nearly solid wall, with Corinthian pilasters. Large poles were passed through the upper part of the building, and were supported by sockets, as is shown in Fig. 227. The object of these poles was to support an immense awning which was extended over the heads of the spectators. The Colosseum was begun by Vespasian, and was finished by Titus, in 80 A.D.

§ 149. The buildings destined for the sham sea-fights were considerably larger. The first was constructed by Julius Cæsar. In that which was built by Augustus the basin was 1900 feet long and 1270 feet broad.

The Circus, or race-course (Fig. 229) resembled the Greek Stadium and Hippodrome, but was distinguished from it by the Spina, which was a raised barrier dividing the circus lengthways, and serving to mark the laps of the course. This long dorsal wall was architecturally ornamented and adorned with sculptures, and at the ends

were the so-called *Metæ* or goals. The Circus, which was principally intended for chariot and horse races, served also the purpose of an amphitheatre and a *Naumachia*, as also for popular assemblies, etc. The most celebrated circus at Rome was the Circus Maximus (Fig. 229). The remains of the Circus of Maxentius, usually entitled

Fig. 229.



Bird's-eye View of the Circus Maximus.

that of Caracalla, have been preserved. It was constructed at the beginning of the fourth century after Christ, and was 1950 feet long by 250 feet broad.

§ 150. The baths, which with the ancients formed one of the most indispensable necessities of life, were a very important feature at Rome. They constituted, therefore, the most magnificent constructions in which Roman architecture displayed all its riches and peculiarities.

The baths, of which the first were built by Agrippa, during the reign of Augustus, in connection with the Pantheon, were probably copied to a certain extent from the Greek gymnasia. In connection with the buildings actually intended for bathing there were courts for athletic exercises and halls with seats for the philosophers and teachers. In the most flourishing days of the Empire there were even gardens and public museums adjoining the baths. These edifices were consequently the rendezvous of those at leisure and the centre of sociability. The arrangement of these baths was, generally speaking, as follows :—

§ 151. Rooms for undressing abutted on to a spacious entrance-hall which served as station for the servants. Right and left of

these were halls for cold and hot baths, one side probably being reserved for men and the other for women. They contained basins with a passage round them, and were lofty and bright, and possibly exposed to the open air. Behind these lay the rooms for heating, from which the cold and warm water was conducted by various pipes into the baths: here also were situated the rooms for anointing after the bath. A special place was allotted to steam-baths.

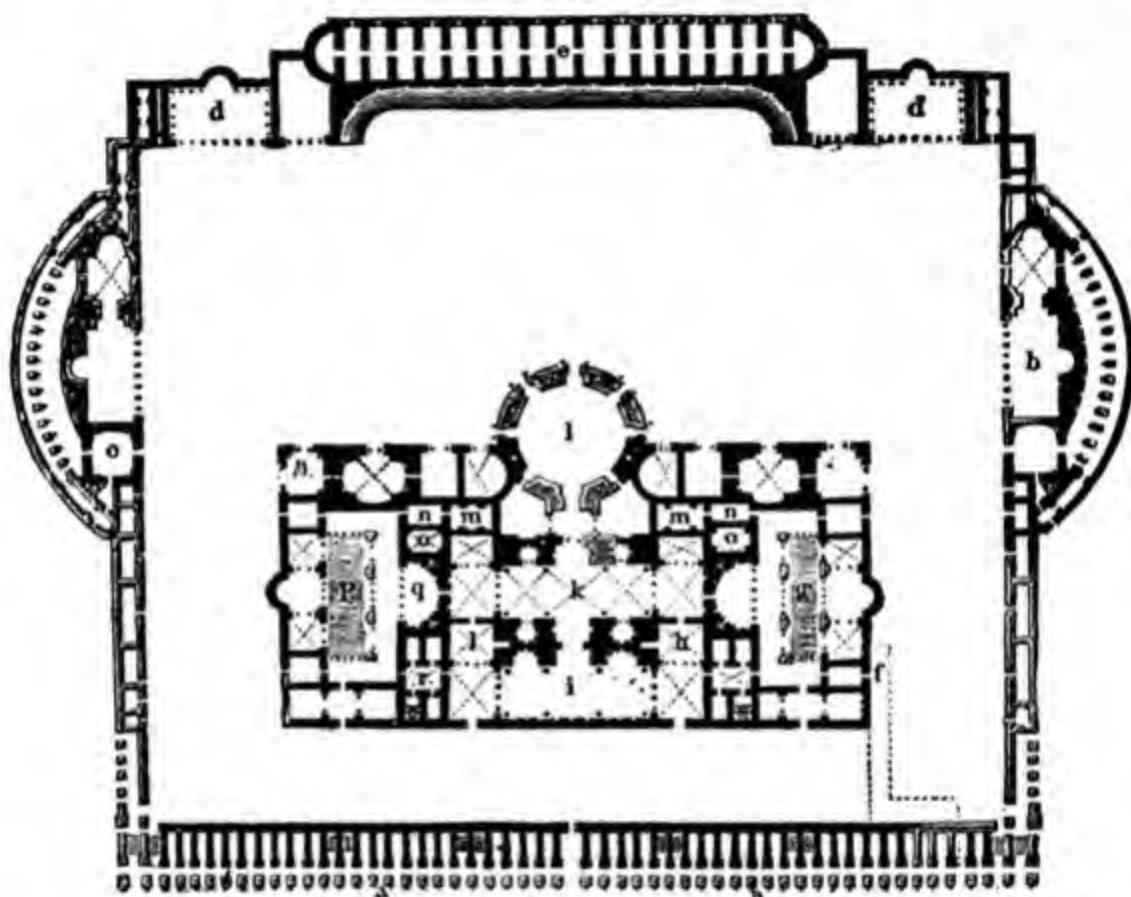
Besides these spaces, which were devoted to the requirements of the bath properly speaking, halls for games and amusements formed another feature of the construction. From the common entrance-hall the main-hall or Ephebeum was entered, which served as a place for assemblies and gymnastics. Adjoining this were halls for playing at ball, and open courts for wrestlers, planted with trees and surrounded by colonnades; also a large uncovered swimming pool, and finally passages and halls for oratorical displays and conversation: there were even libraries and theatres and temples in connection with the establishment.

A series of emperors vied with one another in erecting these extensive constructions, and in embellishing them with all possible magnificence and with the most celebrated paintings and sculptures.

§ 152. The most remarkable remains of such constructions which are still extant at Rome are the Baths of Titus, of Caracalla, and above all those of Diocletian. The great hall, or ephebeum of these latter baths had eight large columns of granite, which supported a cross-vault, and was in later times converted by Michel Angelo into the church of Sta. Maria degli Angeli; whilst a circular building which was attached to it became subsequently the church of S. Bernardino. The most extensive baths were those of Caracalla (Fig. 230), which embraced a surface of about $1\frac{1}{4}$ million square feet. The halls and basins contained in this space were, as was probably the case in all buildings of a similar nature, surrounded by a quadrangular block of buildings. This enclosure was a square of about 1150 feet each way, one side of which consisted of a row of small chambers opening on to the street, which were connected by steps with an upper storey, which probably formed a kind of entresol. The object of these chambers is somewhat doubtful. On the opposite side were several halls (*d*), and between them a large reservoir fed

by an aqueduct (*e*), in front of which was a Theatridium 530 feet long, where youths went through their exercises or contended for prizes.

Fig. 230.



Ground-Plan of the Thermæ of Caracalla.

In the two other sides were also various halls, which, perhaps, like *d*, may have served for dramatic representations, lectures, disputations, and other exercises of mind and body. The space between the central establishment and the walls which surrounded the whole enclosure was laid out in gardens, with which were connected the race-course and spaces for wrestling and games (*Xysti*).

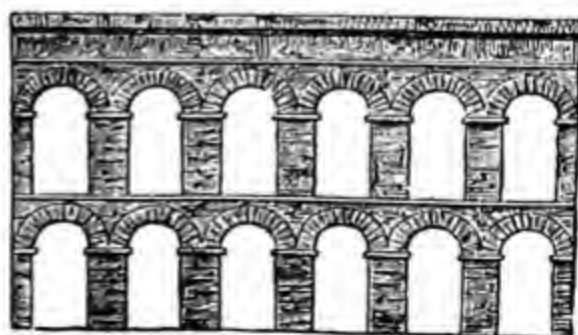
The internal building, which was exclusively intended for baths, had on its north-east side, which was exposed to the cold winds, no other openings but four entrance doors; whilst the whole opposite south-west front communicated with the gardens by many large openings, which were separated by columns. Two of those doors on the north-east front led to the spaces for games; whilst the two

centre ones led to the baths, and first of all to rooms which probably served for undressing and dressing (*Apodyteria*), which were only separated by pillars from the *piscina*, or large reservoir for swimming (*i*). It is undetermined whether this space, which contained cold water, was quite open to the air, or whether it was covered over with a vaulted roof. This *piscina* communicated by means of the chamber marked (*r*) with the court *p*, on which abutted the apsis *q*, and was similarly connected on the opposite side with the court *g*. These two courts, *p* and *g* (*Sphæristeria*), served probably for gymnastics and athletic exercises, and were open in the centre like the atrium in dwelling houses. Between these two courts *p* and *g*, and in connection with them, lay the great central hall (*k*) of the whole establishment: this was roofed over, and was used for warm baths, and had round it four small circular chambers, intended probably for steam-baths. Nothing certain can be determined concerning the object of the *rotunda* (*l*), nor of the other halls which opened into the gardens: *m*, *n*, *o* were rooms for heating water and air.

§ 153. Besides these immense public *thermæ*, there were also private bathing establishments; but as these were merely intended for bathing they had less pretensions to architectural importance, although they were suitably decorated for the purpose for which they were intended, and laid out with considerable skill. Specimens of this kind of bath are to be seen at Pompeii.

§ 154. Bridges must not be forgotten in the list of Roman public buildings. The Romans thought these constructions worthy of more than mere technical treatment, and by means of architectural adornment managed to bestow an artistic importance on their plain outlines. This they effected principally by the introduction of niches with statues between the arches, and by the erection of pillars and statues upon the bridge, or of triumphal arches in front of them.

Fig. 231.



Part of a Roman Aqueduct.

Examples of such bridges are the Ponte Rotto (*Pons palatinus* or *senatorius*), and the simple *Pons Aelius*, which is now the *Ponte S. Angelo*, at Rome.

§ 155. Aqueducts form one of the most characteristic features of Roman architecture. Although these simple successions of gigantic arches, which stretch for miles, have no pretensions to artistic beauty, yet their wonderful size and extent bear witness to the vast conceptions of Roman genius (Figs. 231 and 232).

Fig. 232.



Ruins of an Aqueduct in the Campagna, near Rome.

They bestow a classical impress on the Campagna through which they pass reminding us that no other people but the Romans would have carried out such a stupendous undertaking.

§ 156. Public fountains were extremely numerous at Rome, and were adorned with statues and pillars. Nothing but the bare remains of such a building have remained in existence, and that is the so-called "*Meta sudans*," which is a conical structure of tiles, from which a jet of water rose to a considerable height, whilst a cascade was formed at the lower part by the falling water, and by that which issued from various springs at the base.

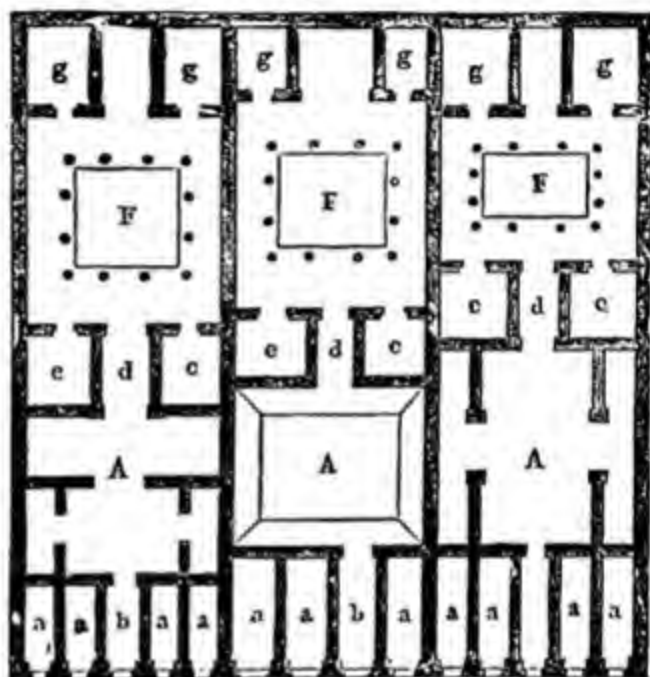
§ 157. In the times of the Republic till the seventh century after the foundation of the city, the dwelling houses were constructed with great simplicity. The ground-plans of three such houses (Fig.

233) are taken from an antique plan of Rome, engraved on marble which is to be found in the museum of the Capitol of that city. *a* are shops, *A* the atrium, *b* the prothyrum, vestibulum, *d* the tablinum, *F* the peristyle, *e* and *g* dwelling-rooms. In later times the Romans vied with one another in the magnificence of their private houses not only in the richness of the materials employed, but also in their extent, as conveniences and luxuries of all kinds came into fashion; especially in their country residences, which the Romans built on the neighbouring mountains, or on the shores of Baiæ and Naples, and which were subsequently introduced over the whole of Italy. Pliny the Younger gives a detailed description of the villas of the citizens.

With the exception of the houses of the patricians, the usual dwelling-houses at Rome

were obliged, owing to the size of the city and its immense population, to be constructed of several storeys, which were let out in lodgings. In pursuance of a decree of Augustus the height of these houses might not exceed 75 feet: their construction must consequently have differed materially both from Grecian houses and those of the smaller towns. The houses of the patricians, however, and all those, moreover, which only contained the dwelling of the possessor, even when some settled portion of the building was intended to be let, were arranged like the corresponding Grecian buildings, as is shown by Fig. 233, and as is to be seen from those which are still in existence at Pompeii. There was, namely, an atrium in the middle space of the front part of the building, whilst behind was a court containing a fountain and surrounded by pillars

Fig. 233.



Ground-Plan of three Roman Dwelling-Houses.

round which were grouped the dwelling-rooms, consisting of one storey only. These houses were sometimes constructed of greater extent.

§ 158. Thanks to the excavations at Pompeii, it is possible to gain a clearer knowledge of the Roman dwelling-house, which was entirely different in its plan from modern dwelling-houses, than could be attained by the ground-plans shown in Fig. 233. From Pompeii, however, we gain no light regarding the many-storeyed houses at Rome, which were inhabited by different sets of tenants, but have to content ourselves with the knowledge of those houses which were the residence of the proprietor only: for only the latter class of house has been discovered at Pompeii. Though it is true that hired rooms are found, still they consist only of shops and dwelling-rooms connected with them, or even separated from them like our entresols. When in a house at Pompeii, as also probably in a Grecian house, a storey is found above the ground-floor, it consisted of a subordinate entresol or mezzanine, which did not extend over the whole building, and, as has been before remarked, may sometimes have been let out on hire, but generally served as rooms for the household servants, and even occasionally, perhaps, for bedrooms.

On the other hand, those houses which were called '*insulæ*,' which at Rome contained dwellings in several storeys intended only for the purpose of letting, must have been different from the houses of Pompeii, inasmuch as their *raison d'être* was entirely dissimilar: for the prohibition of Augustus to build houses higher than 75 feet cannot possibly have applied to buildings such as have been discovered at Pompeii. The houses at Pompeii, which contained dwellings for hire near the main dwelling, had entrances from different sides and several courts, around which each tenement formed a division separated from the remainder.

It may therefore be taken for granted that, with the exception of these many-storeyed houses which were built in the large towns, the dwelling-houses possessed, at most, one upper storey, and that this covered particular parts of the building only. In general all the rooms were grouped on the ground-floor round the atria or courts and the peristyles or halls. The two last-mentioned portions of the

house had the most importance attached to them, because they constituted the favourite spot in summer on account of the breeze, and in winter on account of the sun.

By this arrangement, as well as by the embellishment of the rooms, the ancient house is essentially different from that of the Middle Ages, or of modern times; but particularly in this respect, that whereas in both the last descriptions of house great stress is laid on the front, that part of the building was hardly taken into consideration at all by the Romans; and their houses, except the open shops, generally presented a dead expanse of wall to the passer-by. They merely endeavoured to give the entrance to the house a somewhat more important appearance; whilst the houses of persons of distinction, and those of a palatial character, had even a portico or vestibule in front of them. A view into the street from the interior of the house, a point to which so much attention is paid now-a-days, was never contemplated in the town-houses of the ancients; though in their villas windows were introduced in order to enjoy a beautiful view of landscape, mountains or sea; as, for instance, in the so-called Villa of Diomedes, at Pompeii. In cases where the view was not the object sought for, the windows were probably small and placed high in the wall.

Totally in opposition to the inclination of modern times, which often sacrifices the utility and comfort of the internal arrangements of a house to an imposing frontage, in order that a splendid external effect may be produced, in their houses the Romans wished to hide their riches as much as possible, and directed all their care and attention to the arrangement and fitting up of the interior, without consideration of other people's impressions; and effect was only sought for in those buildings which served public purposes, and on them the Romans freely lavished in the exterior, as well as in the interior, all the architectural splendour which they had at their command. As a consequence of this tendency there was little perceptible difference externally between simple and rich houses, so that one could not be said to be thrown into the shade by the other.

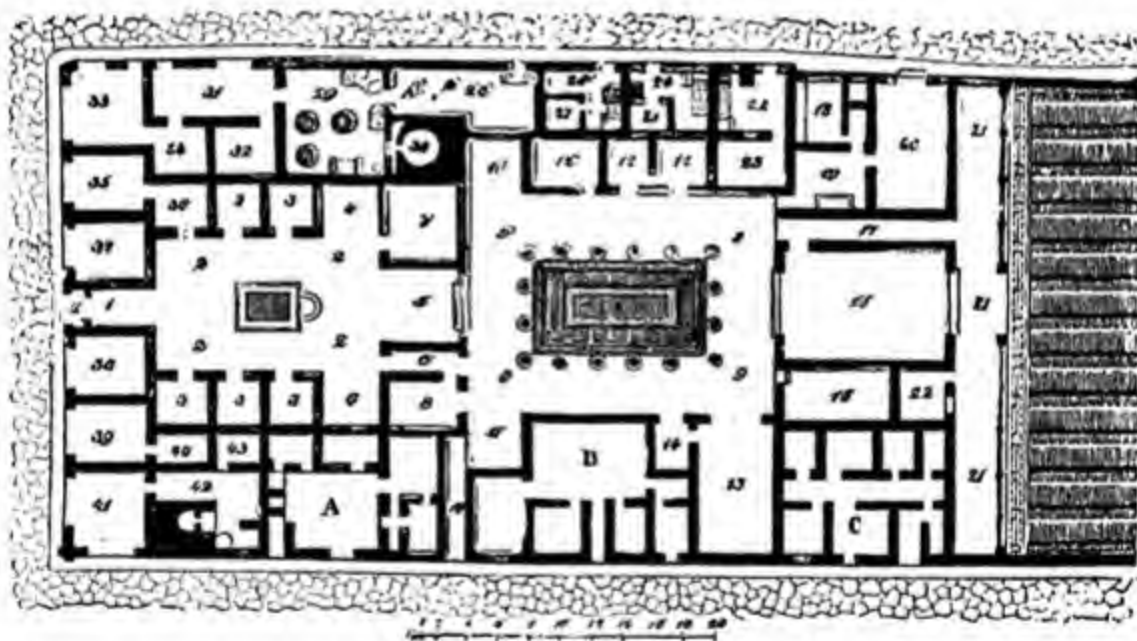
But if little attention was paid to the external aspect of the building, the interior, as has been before remarked, displayed, especially in houses of some importance, a beautiful perspective vista

through the pillared courts, with their walls brilliant with varied painting; whilst the eye was delighted with the floors of choice mosaic and with statues, and in the background were fountains and shrubs (see Figs. 237 and 259; also part of a painted wall, Fig. 242).

The absolute symmetry, which must of necessity be maintained in public buildings as the first requisite for the production of a magnificent effect, was often overlooked in dwelling-houses, and complete symmetry was sacrificed to considerations of utility.

The system which has just been described was the prevalent one in all houses; still many modifications were introduced, according to the size and shape of the site, and the property and position of the occupant. It would lead us too far to enter into these numerous

Fig. 234.



Plan of the House of Pansa.

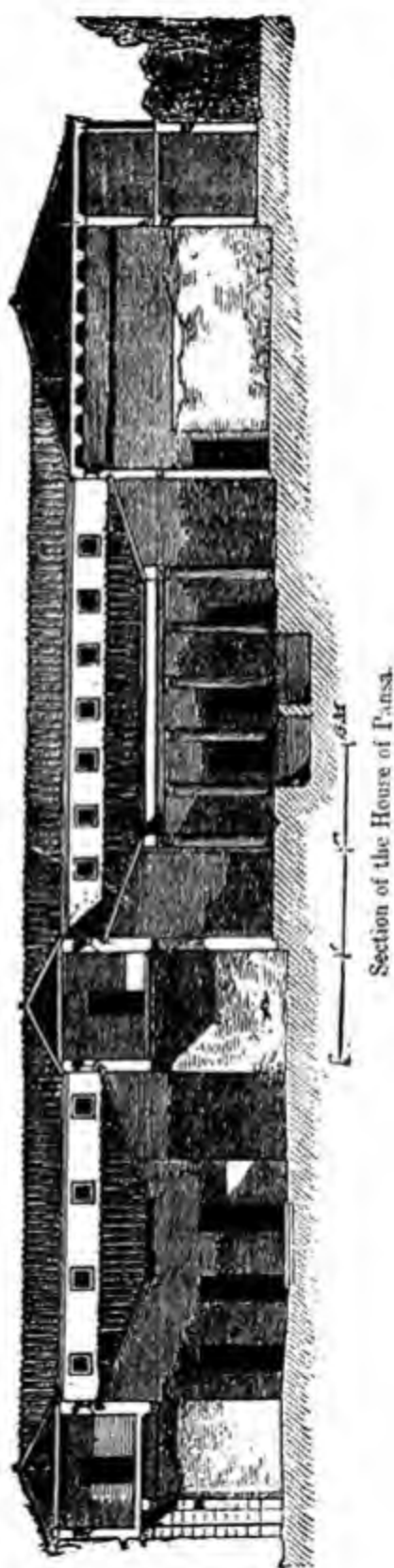
a Vestibulum. 1 Prothyrum; 2 Atrium; 3, 7, & 8 Reception Rooms; 4 *Alæ*; 5 Tablinum; 6 Fauces; 9 Peristyle; 10 Posticum; 11 *Alæ* of Peristyle, corresponding to *Alæ* of Atrium; 12 Cubicula, or Bedchambers; 13 Triclinium or Dining-Room, with 14 small Pantry; 15 *Ceus*, or Hall for entertaining guests; 16 Winter Triclinium; 17 Fauces or Passage; 18 Kitchen, with 19 Pantry and 20 large Room in connection with the same, perhaps for Stores or Scullery for servants, with a passage into a side-street; 21 Portico with 22 small Cabinet looking to the kitchen garden; 22, 24, 26 Shops looking into the side-street, with 23 Back Room; 25, 27 Cabinets: each shop having narrow steps to the floor above; 28 and 34 Let as a Bakery, with parts arranged as shops: of these 29 was the Meal-Room, with three Mills; 30 the Baking-Oven; 35 Shop, belonging to and connected with the house, intended for the sale of the spare agricultural produce of the owner's estates; 36 Room in connection with the above; 37, 38, 39 Shops connected only with the street, the last with Cabinet 40; 41 Shop with Workshop, 42; A. B. C., Houses for letting, quite disconnected from one another, and from the Interior of the House.

peculiarities, and therefore only one of the most important houses will be described, namely, the so-called house of Pansa (Fig. 234), which represents most completely the type of the Roman house, and the section of which is shown, in a restored form, in Fig. 235.

The Roman dwelling-house, which is like the Grecian in its main features, consists, as the latter did, of two divisions. But their meaning and employment did not coincide; inasmuch as whilst the front part in Grecian houses constituted the *andronitis* or men's apartments, in Roman houses it formed the public part of the building, in which, according to the prevailing custom, the clients were wont to wait on their patron. The back part, on the contrary, was intended for the residence and real dwelling-rooms of the family; whilst in the Grecian houses the back was the *gymnaikonitis*, and only intended for apartments for the women and domestics.

The atrium formed the central part of the front of the house, the peristyle the central part of the back: both of these were open to the air. Many varieties of the atrium occur. The simplest is the so-called Tuscan atrium, and consists of a square court open at top with a roof sloping from all the four sides towards the opening. This was supported by two beams

Fig. 235.



Section of the House of Pansa.

passing through at the edge of the opening, and two other beams let into the former (see Fig. 235), and was covered with flat or hollow tiles. This central opening, towards which the rain from the roof flowed, and which also served to introduce air and day-light, was called the *compluvium*, and a walled tank called the *impluvium*, corresponding in size, was constructed in the floor of the building, in which the rain-water that flowed down from the roof was collected, and thence conducted by pipes into a cistern for household use.

The larger *tetrastyle atrium*, which necessarily had to form part of a larger house, was only distinguished from the simple atrium, which has just been described, by four columns to support the beams, being introduced at the corners of the opening. In case the size of the opening increased materially more columns were introduced, as in the *peristyle*. The breadth of the opening, over which an awning was spread to deaden the fierce rays of the sun, was one-third, and in the former instance one-fourth of the width of the atrium.

In country-houses and suburban villas the *peristyle* was placed, in the place of the atrium, immediately behind the entrance: this was the case in the so-called *Villa of Diomedes*, at *Pompeii*.

Around the atrium were grouped the front rooms, as the back rooms were round the *peristyle*, from which two sources they must principally have received their light by means of doors, if we do not accept the probability that where no windows were introduced their place was supplied by light from the roof. In dark chambers they would scarcely have gone so far as to adorn the walls with paintings, let alone the fact that there would have been great difficulty in executing such embellishments without the assistance of daylight.

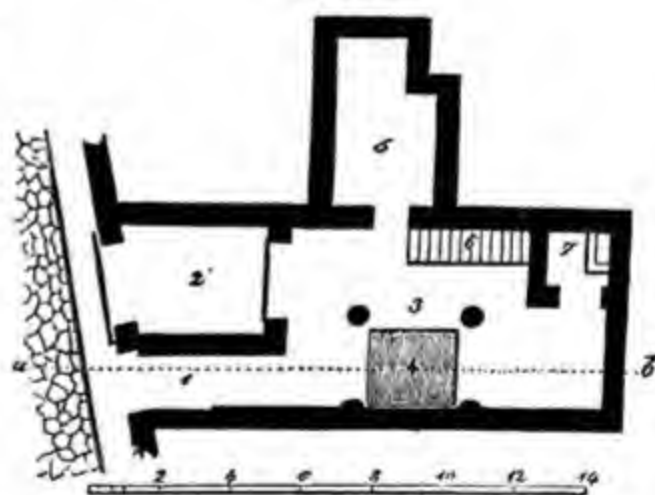
In the large Roman houses vestibules may have run out into the street, and assumed the shape of a portico in front of the house-door, which lay slightly back from the road; but at *Pompeii*, even in large houses, an entrance-hall in the body of the building itself satisfied the wants of the richest and most important inhabitants. This entrance-hall was situated between the street door and a second inner door, and has been designated as the *vestibulum* in the diagram which illustrates this description of the *House of Pansa*. On the

sill of the outer door the word '*salve*' was sometimes executed in Mosaic, by way of salutation.

Some of the chambers which surrounded the atrium and the peristyle had a definite object and position. Such was the *ala*, which was a space opening on to the atrium, and situated at the back corner or the two back corners of the same. Such was the *tablinum*, which also opened on to the atrium, and was situated between it and the peristyle: this last space was provided with a balustrade and a screen that could be interposed or removed at pleasure. At both sides, or sometimes only on one side, of this hall were the *fauces*, or passages, which served to connect the front and back parts of the house. The peristyle was always considerably larger than the atrium, and was surrounded by a greater number of columns. The open part of the peristyle either formed a garden (*xystus*), if another garden were not attached to the back part of the house, or was occupied by a sheet of water with fountains (*piscina*). Behind this peristyle were the *cubicula*, or sleeping-rooms, the number of which varied; and the *triclinium*, or dining-room, which was quite open towards the peristyle. There was, moreover, a small *triclinium* for the nine persons who were intended to find places at the *triclinia*, according to the maxim of the ancients, that the number of guests should never be less

than that of the Graces, nor exceed that of the Muses. Great banquets were often given in the atrium. The rooms for company, *œci* or *exedrae*, also adjoined the peristyle, and were the largest in the house, being quite double the size of the dining-rooms

Fig. 236.



Plan of a small House.

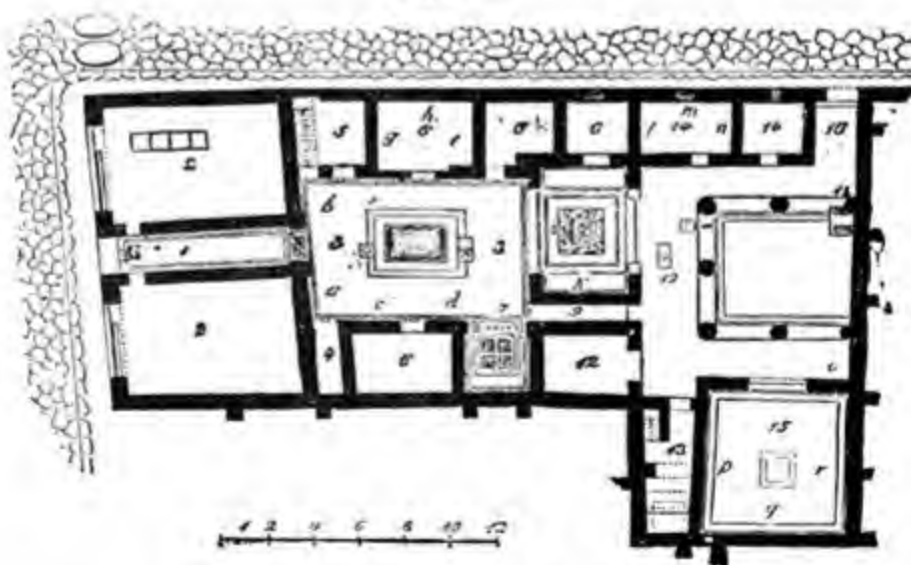
- 1 Entrance (Vestibule); 2 Shop of the Proprietor;
3 Atrium; 4 Impluvium and Compluvium; 5 Bed-
room, with Alcoves; 6 Steps to a little chamber
over the kitchen for the slaves; 7 Kitchen.

Fig. 237.



Restored View of the so-called House of the Tragic Poet.

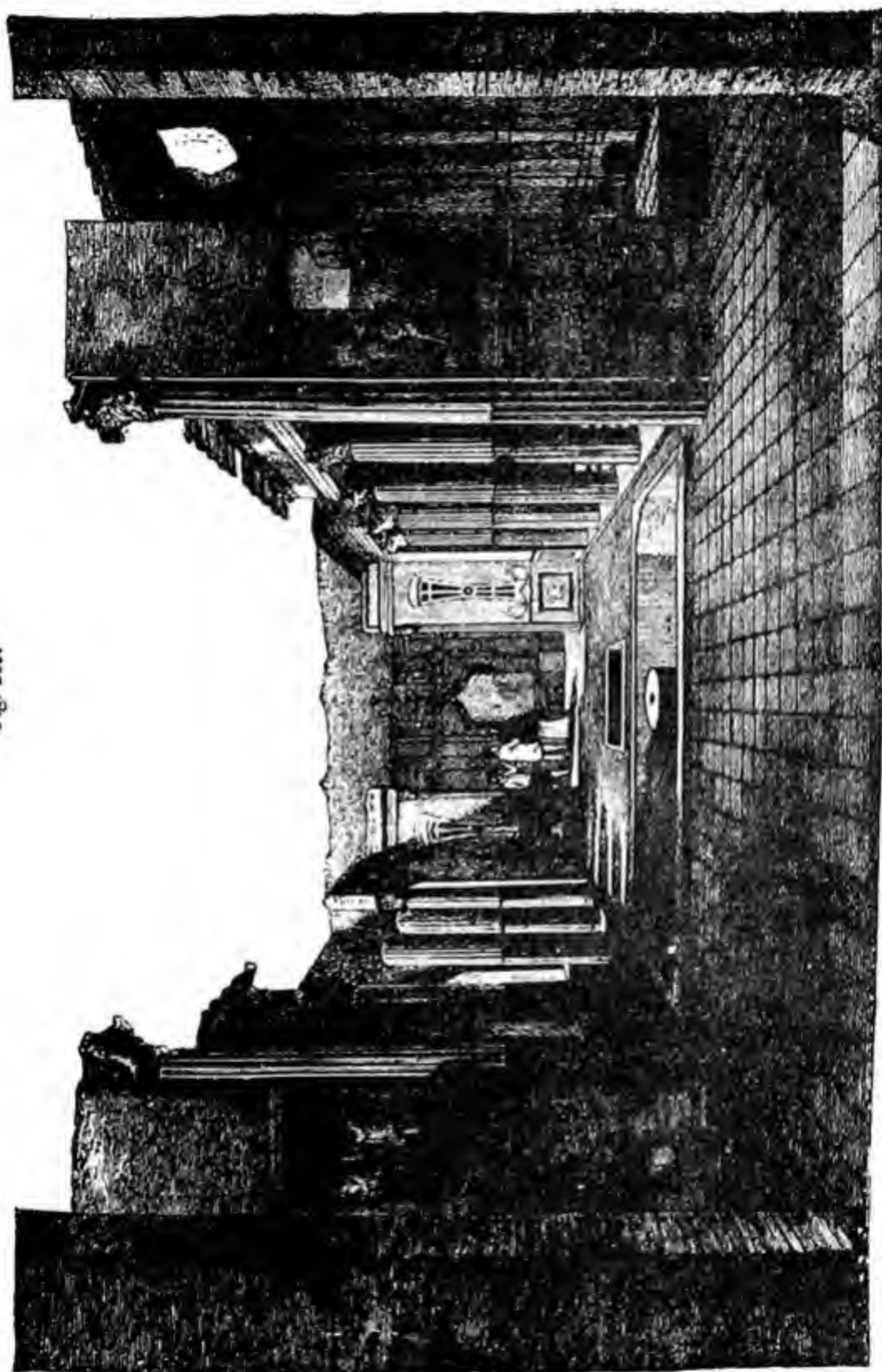
Fig. 238.



Plan of the so-called House of the Tragic Poet.

1 Vestibule, in the Mosaic floor of which a watch-dog is represented; 2 Shops; 3 Atrium; 4 Cloakroom; 5 Room of the Atrienſis, with steps to the upper storey; 6 Sitting-room: partly perhaps as bedrooms for guests; 7 Ala; 8 Tablinum; 9 Fauces; 10 Peristyle; 11 Statuette of a Faun; 12 probably Winter Triclinium; 13 Kitchen, with narrow steps to the upper storey of the back part of the house: with closet underneath; 14 Cubicula; 15 Summer Triclinium; 16 Posticum.

Fig. 239.



Peristyle in the so-called House of the Vestal Virgins.

in large houses which contained gardens, they were situated opposite the tablinum, at the rear of the peristyle. On the garden side many houses had a colonnade, porticus, sometimes with fountains. The garden itself was either a flower garden or kitchen garden. In very small gardens, trees, &c., painted on the back wall, must have taken the place of real ones, in order to secure a background resembling a landscape through the vista of the various rooms. In this back part of the house there was also a special passage, called the posticum, which opened on to a side street, which was used for domestic purposes and as an entrance to the kitchen and store-rooms.

In larger houses than those which have been discovered at Pompeii, other rooms besides those named may have been introduced, such as libraries, bath-rooms, play-rooms, &c.

Whilst the arrangement just described generally obtained in houses of importance, in houses of smaller proportions much weight was attached to their having an open court-like space to serve, as, or replace, the atrium or peristyle to a certain extent, as is shown, for instance, by the ground-plan of a house which has been excavated at Pompeii.

The restored view of the interior of the so-called house of the Tragic Poet (Fig. 237) is especially calculated to give an idea of the arrangement of many parts, as, for instance, the impluvium in the middle of the Tuscan atrium, the ala at the corner of the same, and close by the door of the passage or fauces, and the tablinum with the through view to the peristyle. Fig. 238 shows the ground-plan of the same house.

Fig. 239, on the other hand, shows the peristyle, with the *œcus* behind and the piscina in the middle, of the house of the Quæstor, which is a richer building than the house of the Tragic Poet.

§ 159. The palaces and country houses of the Emperors were of enormous extent, and displayed the utmost luxury. The palace of Nero, the so-called golden house, was replete with the most costly stuffs, and comprised whole fields, meadows, vineyards, and woods within its circuit.

The ruins of Adrian's villa at Tivoli, in which the Emperor caused the most beautiful places and buildings which he had met with in his travels to be imitated, embrace an extent of seven Roman miles.

Of all these magnificent villas and palaces only a few isolated ruins remain, stripped of all their original ornaments: such are the ruins on the Palatine, which is the site of the Emperor's palaces at Rome. More complete remains of a palace of Diocletian at Salona, which belong to the period of decadence, will be alluded to hereafter.

§ 160. At the suggestion and expense of the late Emperor Napoleon, and under the direction of the architect Rosa, than whom no one could be more fitted for the task, a part of the ruins of the palaces of the Roman Emperors has so far been brought to light that at least the plan of the design can be distinguished, though only isolated fragments of the superstructure, pillars amongst the rest, have been met with. Fig. 240 shows a part of these excavations, namely, the ground-plan of the house of Augustus, as far as it stands on land which belonged to the French Emperor; for it is to be regretted that the side, which extends on the land of the Villa Mills, and which now belongs to a nunnery, is not available for investigation. This plan is borrowed from that executed by Rosa.

This palace was, to judge from the stamped tiles that have been discovered, rebuilt under Domitian, and the excavation is the more interesting because the similarity of the design with that of the richer private houses at Pompeii proves that the main arrangement of the Roman house was normal and universally accepted, and that the principal difference consisted merely in the proportions.

The main entrance to the palace was a spacious open court, which was probably formerly surrounded by porticos. This led immediately into the tablinum, so that to a certain extent it supplied the place of the atrium. On both sides were blocks corresponding to what would be shops in ordinary houses; to the left of the entrance a *lararium*, or sort of house-chapel, and to the right the private basilica of the Emperor, known as the basilica Jovis, with a semi-circular tribune, from whence perhaps the Emperor delivered justice, and which was separated from the rest of the building by a balustrade of marble. Out of this first portion was entered a large square court, paved with slabs of marble, and surrounded by a Corinthian colonnade—this was the peristyle, and it had, as in ordinary houses, various chambers abutting on it. Behind this was the triclinium, or dining-hall, terminating at the extremity of the transverse axis in a round

niche, which perhaps formed the Emperor's seat. On both sides of this niche were passages into the open air, the left of which led to a small cabinet, which served as a retiring place for the guests. The triclinium communicated on one side with the Nymphæum, which may be compared to a winter-garden on a small scale. It contained an oval reservoir of marble, which had a sort of terrace in the middle, on which were ranged flowers and statues; there was perhaps also a fountain in connection with it. There must have been a glorious view through the openings, which were half doors, half windows, between this space and the triclinium: particularly since the wall opposite to the triclinium was adorned with statues in niches. It is probable that a corresponding hall existed on the opposite side of the building. The portions of the building which abutted behind may be considered as an appendix: very probably, as Rosa thinks, one may have served as a library, and the other for dramatic performances. Rows of marble seats were introduced into the latter, as also niches for statues.

§ 161. The decadence of Roman art supervened step by step with the decadence of the Roman empire. Under the Emperors Aurelian and Domitian important and magnificent buildings were erected in accordance with the power and might of those Emperors, but in them are recognizable an acceptance of foreign elements, and a craving to surpass in splendour all that had hitherto been constructed, as well as new and unusual designs.

The Roman style, moreover, in its wide diffusion over the extensive territory of the Roman empire, was transformed in many ways: as, for instance, in the East, where the meaning of the designs was entirely lost sight of in the attainment of purposeless richness and a multiplicity of excessive ornamentation. The buildings at Helio-*polis* and *Palmyra* are instances of this failure. But that the same tendency was in operation in the West is shown, amongst other examples, by the palace of *Diocletian*, at *Salona*, which is now *Spalatro*, in *Dalmatia*. This palace, which dates from the fourth century, is of extreme magnificence, and forms a square of about 750 feet, surrounded by high walls and towers, with colonnades, temples, and dwellings for the Emperor and his suite, differing in many respects from the order of architecture until then employed, and aiming at picturesque effects.

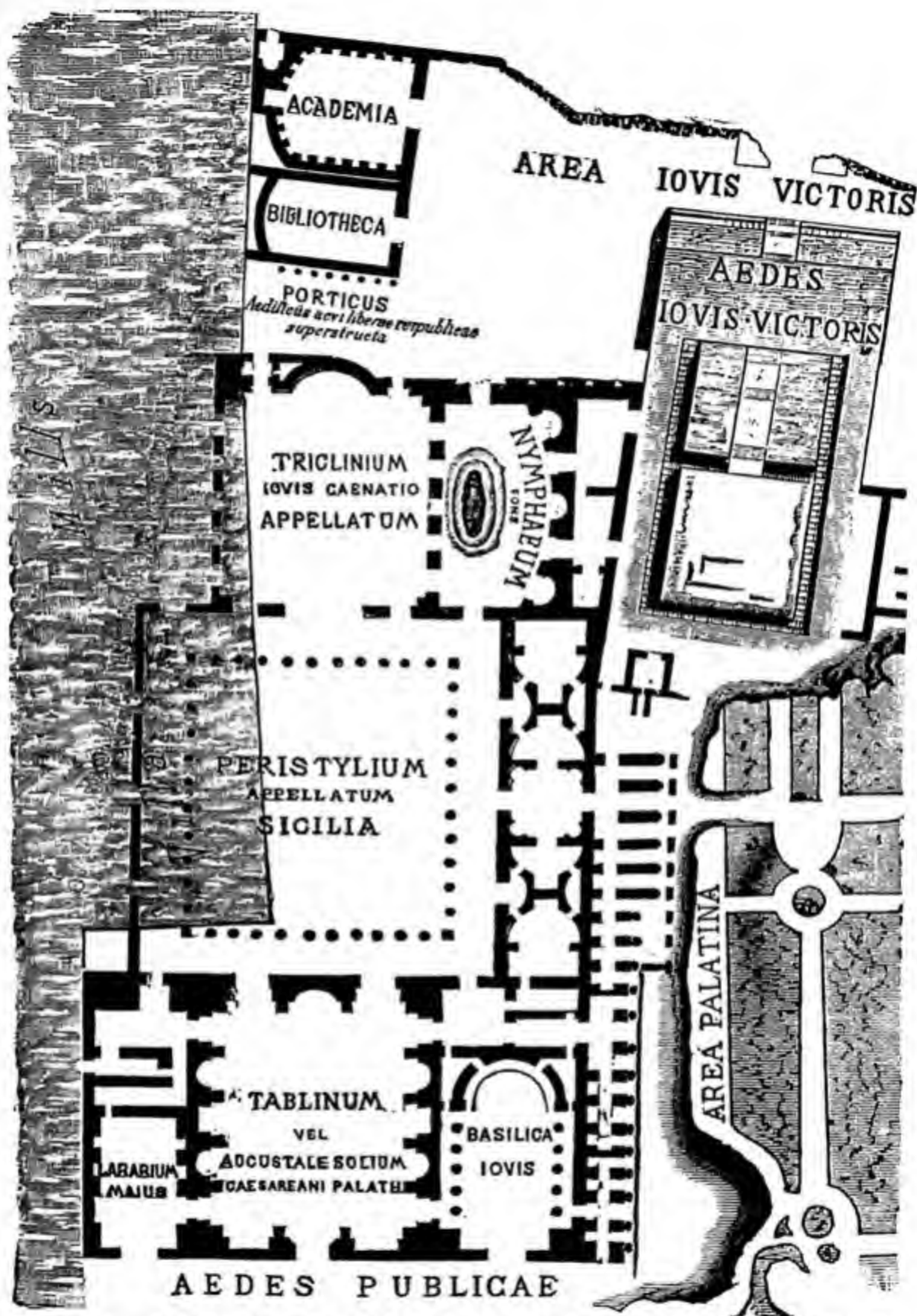


Fig. 240. Ground-plan of the House of Augustus at Rome, recently excavated from the ruins of the Imperial Palaces.

§ 162. The tendency which had been for some time perceptible to produce a picturesque effect by grouping and contrasts of light and shade, kept continually increasing, owing to sub-division of detail and the application of new designs, as is shown by the above-mentioned palace at Spalatro; whereas the sum and substance of classical architecture is based on simple lines, and the constructive signification of the various parts is always an essential factor in its totality. Increasing barbarism displayed itself in the heavy and eccentric mouldings of the entablature, which were generally overladen with ornamentation; as also in the unfinished execution of the details and embellishment, which became clumsy and meaningless. At the same time the arches and vaults no longer rested on continuous entablatures supported by columns, but immediately on the capitals of the columns, or on entablatures bent into the form of an arch for the central intercolumniation. Thus each column has its own entablature as broad as itself, which projects independently lengthways to the column, and displays a profile on three sides.*

Fig. 241.



Fragment of the Entrance-Façade of the Palace of Diocletian at Spalatro.

* These broken entablatures (*entablement recoupé*), as, for instance, in Fig. 220, are not, however, an exclusive attribute of late Roman architecture, as they occur much earlier; for instance, in the triumphal arch of Septimius Severus, at Rome; under which Emperor the decadence of Roman art may be said to have commenced: they also occur in the older arches of Trajan, at Beneventum.

The tendency of the period of decadence is particularly illustrated by the introduction of small shafts resting on brackets, which serve no other purpose than to adorn and enliven the façade (Fig. 241). Between these small shafts are alternate windows, with a semi-circular head and niches of various shapes. Curved pediments also occur, of which, as of the broken entablatures, we shall have to speak later on, when treating of the decadence of resuscitated classical architecture—namely, in the *roccoco* style.

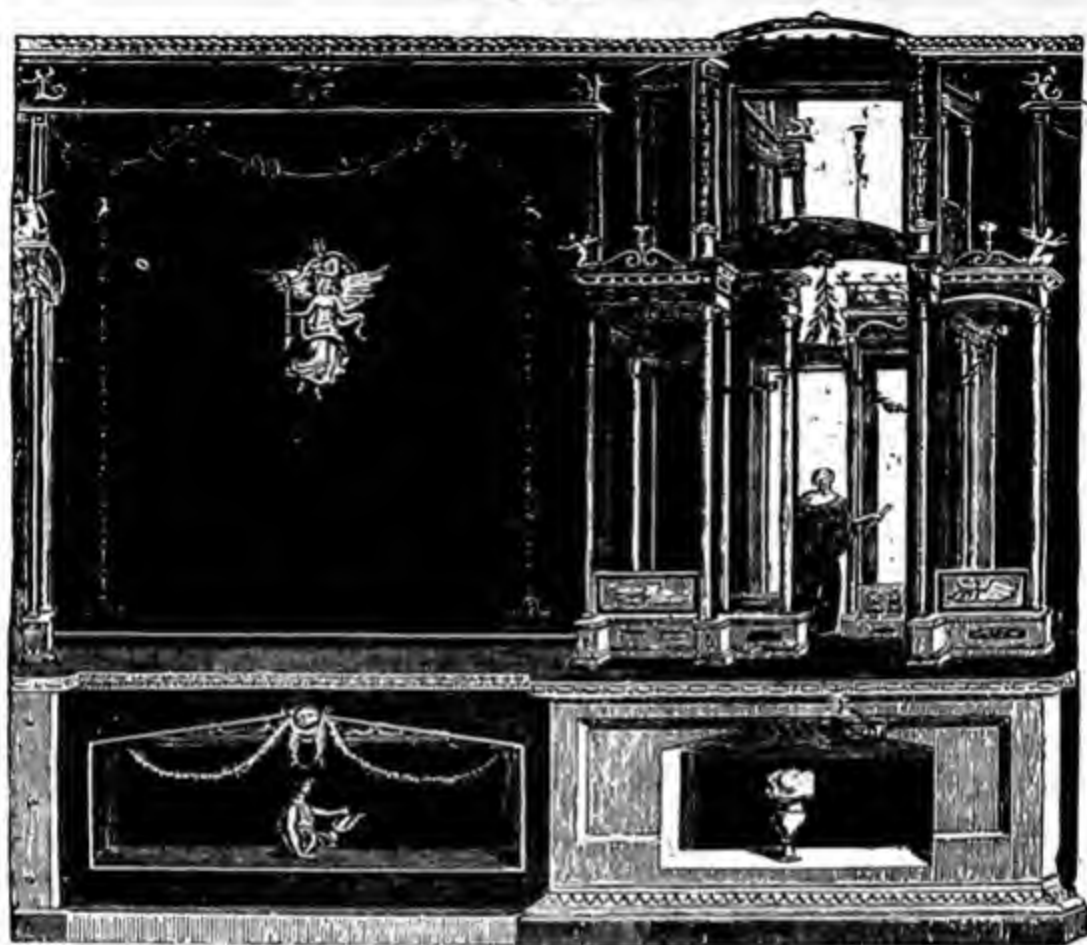
§ 163. At the close of this division of the work mention must be made of the mode of decoration employed for interiors; because, though the subject properly belongs to the department of painting, yet it forms a characteristic feature in Roman architecture.

Inasmuch as we are almost entirely indebted to the buildings of Pompeii for our knowledge of this wall-painting, the term "*Pompeian wall-painting*" has been adopted to express this kind of embellishment, although specimens of this description of ornament have been discovered amongst the ruins of Rome; as, for instance, in the Baths of Titus.

§ 164. Its characteristics consist principally in the representation of an attenuated style of architecture, with columns of extreme tenuity and corresponding entablatures; by this means, as is shown by Fig. 242, a sort of baldachino with perspectives was formed. There were, besides, panels, in the centre of which were represented graceful floating figures, landscapes and other views, as well as fanciful objects; and, finally, there were embellishments executed with fantastic freedom, which, since their renewed application by Raphael to the vaulting of the Vatican, have been entitled *arabesques*—a word borrowed from Arabian ornamentation, although the principles of the two are entirely different.

The walls of all the rooms were painted. Generally two-thirds of the height above the plinth—which was of a dark colour, or even black—was painted a deep reddish brown, but sometimes yellow, or even azure blue; whilst the other third was ornamented by the above-mentioned slender columns, and by tendril-like paintings on a white ground. The graceful and fantastic way in which these various forms of men and animals, as well as plants and architectural features, are treated, constitutes, together with the lively colouring, the

Fig. 242.



Pompeian Wall-Painting from the Pantheon at Pompeii.

principal charm of Pompeian ornamentation. All the parts are so harmoniously blended, that no single one assumes an undue importance, nor attracts attention at the expense of the remainder.

SECOND BOOK.

ROMANESQUE ARCHITECTURE.

A. EARLY CHRISTIAN ARCHITECTURE.

- I. Roman Christian Basilicas and Circular Architecture.
 - II. Byzantine Architecture.
 - 1. Byzantine Architecture in Armenia and Georgia.
 - 2. Russo-Byzantine Architecture.
 - III. Mahometan Architecture.
 - 1. Arabian Architecture in general.
 - 2. Arabian Architecture in Spain.
 - 3. Arabian Architecture in Egypt and Sicily.
 - 4. Perso-Arabian Architecture.
 - 5. Arabian Architecture in India.
 - 6. Turkish Architecture.
-

B. THE CHRISTIAN ARCHITECTURE OF THE MIDDLE AGES.

- IV. Later Romanesque Architecture in general.
 - 1. Later Romanesque Architecture in Italy.
 - a. Later Romanesque Architecture in Central Italy.
 - b. Venetian Romanesque Architecture.
 - c. Later Romanesque Architecture in Lombardy and Upper Italy.
 - d. Norman Romanesque Architecture in Sicily and Lower Italy.
 - 2. Later Romanesque Architecture in France.
 - a. Southern France Romanesque Architecture.
 - b. Norman Romanesque Architecture in France.
 - 3. Norman Romanesque Architecture in England.
 - 4. Later Romanesque Architecture in Germany.
- V. The Pointed Style, called also Gothic (or German).

A.

EARLY CHRISTIAN ARCHITECTURE.

I.

ROMAN CHRISTIAN BASILICAS AND CIRCULAR ARCHITECTURE.

§ 165. CHRISTIANITY, as well as the influx of the Germanic races, could not fail to exercise an essential influence in the transformation of the Roman state, and this influence was naturally extended to Roman art. The same effect was wrought in the East by the Arabs, and by the dissemination of the creed of Mahomet. That branch of art which belongs to totally different periods and races after the propagation of the two religions has been denominated the Romanesque, in order to express in one word the contrast to the calm repose and noble simplicity of classical art. This denomination does not, however, express the new artistic development in all its phases, as has been shown in Section 161, inasmuch as the new growth was synchronous with the decadence of art and the ingression of barbarism; and it was only some centuries later that a more untrammelled movement and a more poetic flight were destined to spring into life, whilst it was not before the Middle Ages that the new art reached its full development. Consequently this title—"Romanesque Art"—must here be applied only to a synoptical review of a whole group of different styles, and in contradistinction to pre-Christian and Modern.

§ 166. The new elements mentioned in the preceding paragraph have been entitled "Early Christian Art," inasmuch as they

were called into existence by the new religious requirements of the nations of antiquity that had embraced Christianity. As, however, these new religious requirements demanded other architectural conditions than those which already existed, a new style of building was naturally necessitated. The deterioration of art was, however, so complete, that the new requirements could not be supplied in an independent and organic manner, but recourse was had to novel and peculiar combinations of old artistic forms; consequently an *ensemble* arose, constituting the Roman Early Christian Style, which differed essentially from the styles already in existence. The northern races, which streamed into Italy, namely, the Ostrogoths and Lombards, were able to render no assistance in the work of development: on the contrary, being rude and uncultivated in comparison with Roman civilization, they swallowed it up and rendered the Roman Christian Style the common property, not only of Italians, but also of Franks and Anglo-Saxons.

§ 167. Through the division of the empire into the East and West, A.D. 395, and through the foundation of the new capital, Constantinople, on the site of the old Byzantium, a "Byzantine" art grew up side by side with the Roman Christian: this will be subsequently treated in a separate chapter.

It was during the sixth century, especially, that Early Christian art assumed a distinctively Byzantine form in the Eastern portion of the empire: and this form was the more independent because the nationality of the people was not effaced as it was in Italy by the influence of northern nations.

Since the Christians, forming no distinct people, and constituting no entire nationality, possessed no well-defined art of their own, and were obliged to employ the architects, builders, and sculptors whom they found amongst the Greeks and Romans for the erection and adornment of their buildings, it may easily be supposed that the first Christian buildings did not differ materially from the heathen buildings which were already in existence. Consequently the title "Early Christian Style" must be understood to apply only to churches as converted basilicas, seeing that in the construction of dwelling-houses the ancient methods were retained for a considerable period. Any alteration in that respect could only take place after

protracted and gradual transformation of the manners and customs of the Romans, and as the new religion acquired a greater influence over architecture. Whilst Roman art in the West passed over into the hands of the barbarians, it settled into a new independent system at Byzantium.

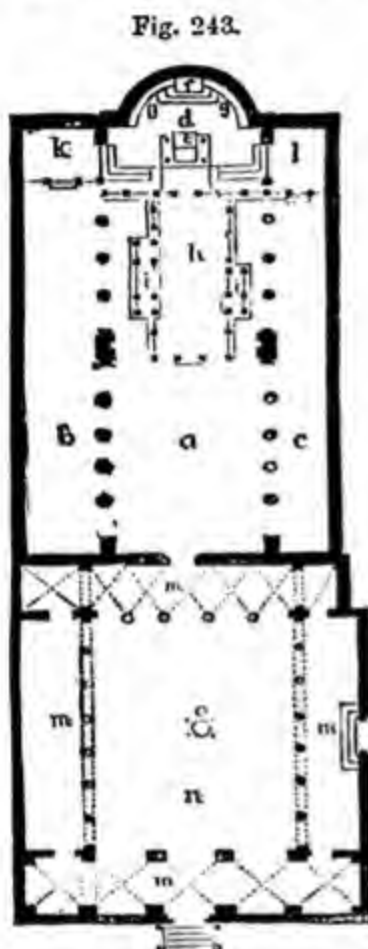
Roman Early Christian Architecture found its chief application in Roman Christian basilicas and in circular churches.

The continuance of this description of architectural style lasted till the end of the ninth century—that is, till the time when the ancient elements were forced to give way before independent new ones, which sprang up as described in a subsequent chapter. Classical forms, however, maintained their ground in Italy, and especially at Rome.

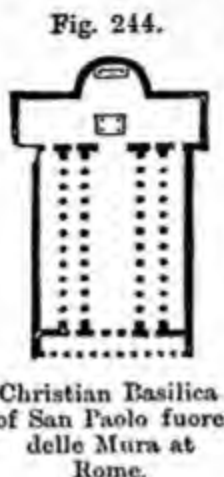
§ 168. When the Christians were first allowed to build churches for themselves, they thought that the best model for the buildings, in which the Christian congregations were to meet together for worship, was to be found in the basilicas, the very name of which was retained as suitable, seeing that it means kingly hall. It is probable that the first Christian basilicas were very like their model; with the exception, however, that the central part of the Roman basilica, which was generally open, was in the Early Christian basilicas covered with a roof. But ere long, about the end of the fourth century, a gradual transformation in the original design was perceptible. A form of basilica was developed from the genius of Christianity, which was retained unaltered for succeeding centuries. Although the main outline remained the same, different proportions were assumed: and it was particularly the architecture of the interior that gave its peculiar appearance to the Christian basilica. Owing to the fact of the nave being roofed over, an essential modification took place compared with the Roman basilicas, which were not vaulted, but formed a kind of open court surrounded by colonnades; whereas the new buildings assumed the form of an enclosed nave, of which the colonnades became aisles, and terminated by a recess called the tribuna, which was less isolated than in the ancient basilicas. The typical form of the Christian basilica is as follows:—

§ 169. The interior was divided by two rows of columns into

three aisles, of which the central one (*a* Fig. 243) was broader and higher than the side-aisles (see Fig. 245), *b* for men and *c* for women,



Ground-Plan of the Christian Basilica of San Clemente at Rome.



Christian Basilica of San Paolo fuori delle Mura at Rome.

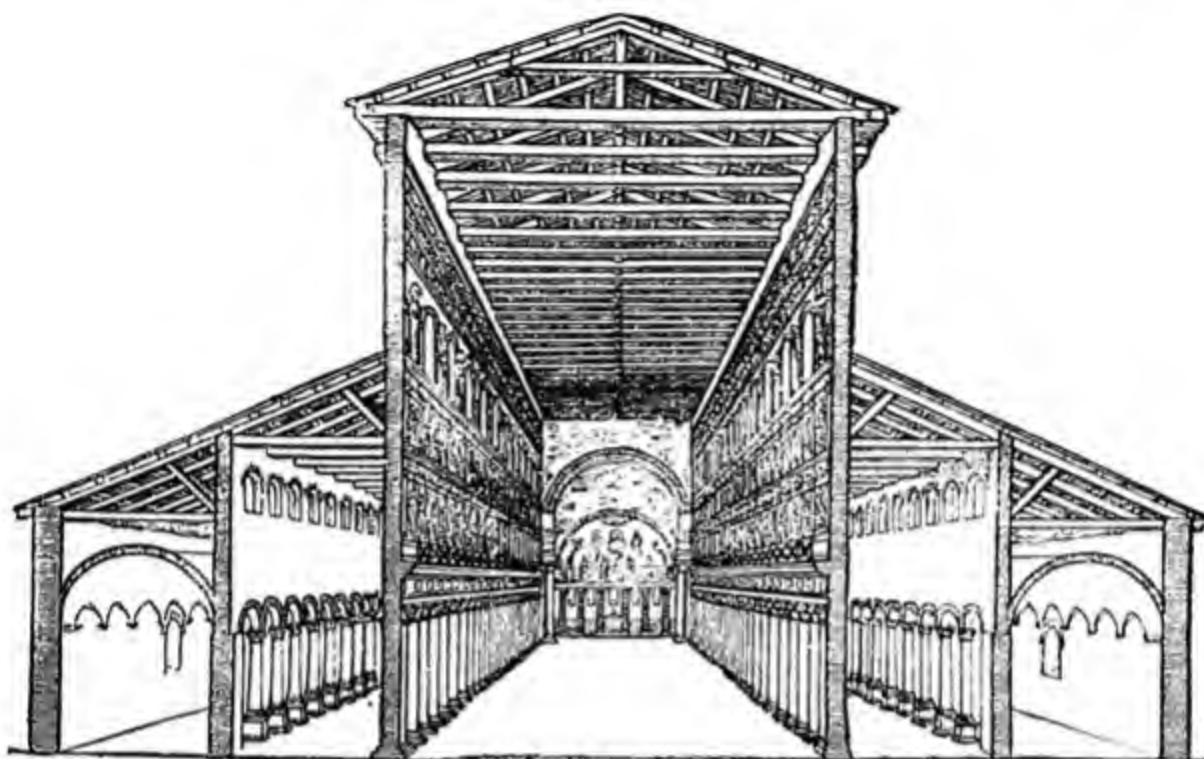
and was terminated at the opposite end to the entrance by the apse. The columns were sometimes surmounted by the old architrave, the weight being supported by flat relieving arches; but they were generally connected by semicircular arches, which supported a wall pierced with small narrow windows; these, like those in the walls of the side-aisles, had a semicircular head. Sometimes a transept was introduced in front of the apse, the elongation of which in later times gave rise to the cross-like form of churches. This transept was separated from the main aisle by semicircular arches, and the ground form of the whole building assumed the form of the letter T.

Large basilicas sometimes have as many as five aisles (see Fig. 244)—namely, a main-aisle in the middle, and two lower aisles on each side (Fig. 245).

The roofing of the basilicas consisted of beams with a flat panelling, which was richly gilt in earlier times, or the rafters of the timberworks were left without a casing, and were ornamented with coloured embellishments (Fig. 246).

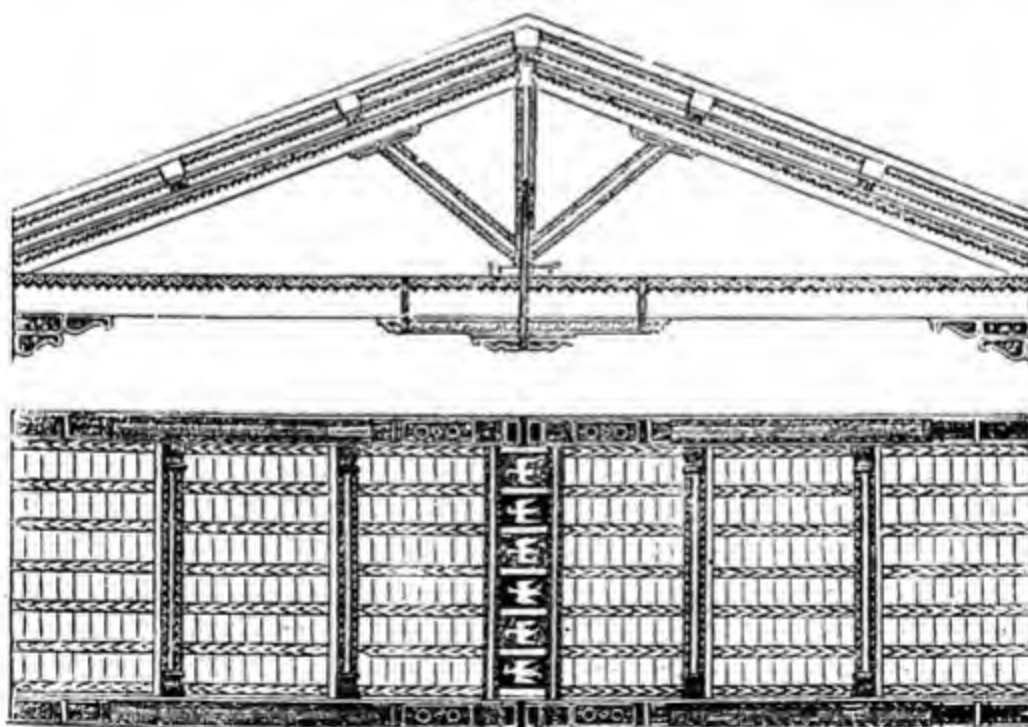
§ 170. At the east end in the transept in front of the apse stood the altar (Fig. 247, *e*); this was frequently covered by a baldachino supported on four pillars. Behind, in the tribuna itself, was the seat of the bishop in the middle raised on steps, the cathedra (*f*), and in a semicircle on both sides, the seats of the higher ecclesiastics (*g*). In front of the altar, at the end of the middle-aisle, was a long space

Fig. 245.



Section and Interior View of the five-aisled Basilica of S. Pietro at Rome, before its restoration.

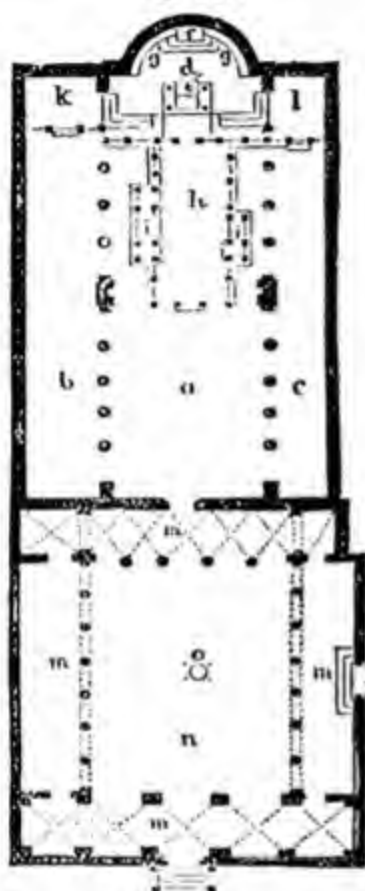
Fig. 246.



Profile and View from beneath of the Rafters in the Christian Basilica of San Miniato at Florence.

surrounded by barriers of marble (*h*) for the lower clergy, who formed the choir, whence the place itself received the name of the choir. A

Fig. 247.



Ground-plan of the Christian Basilica of San Clemente at Rome.

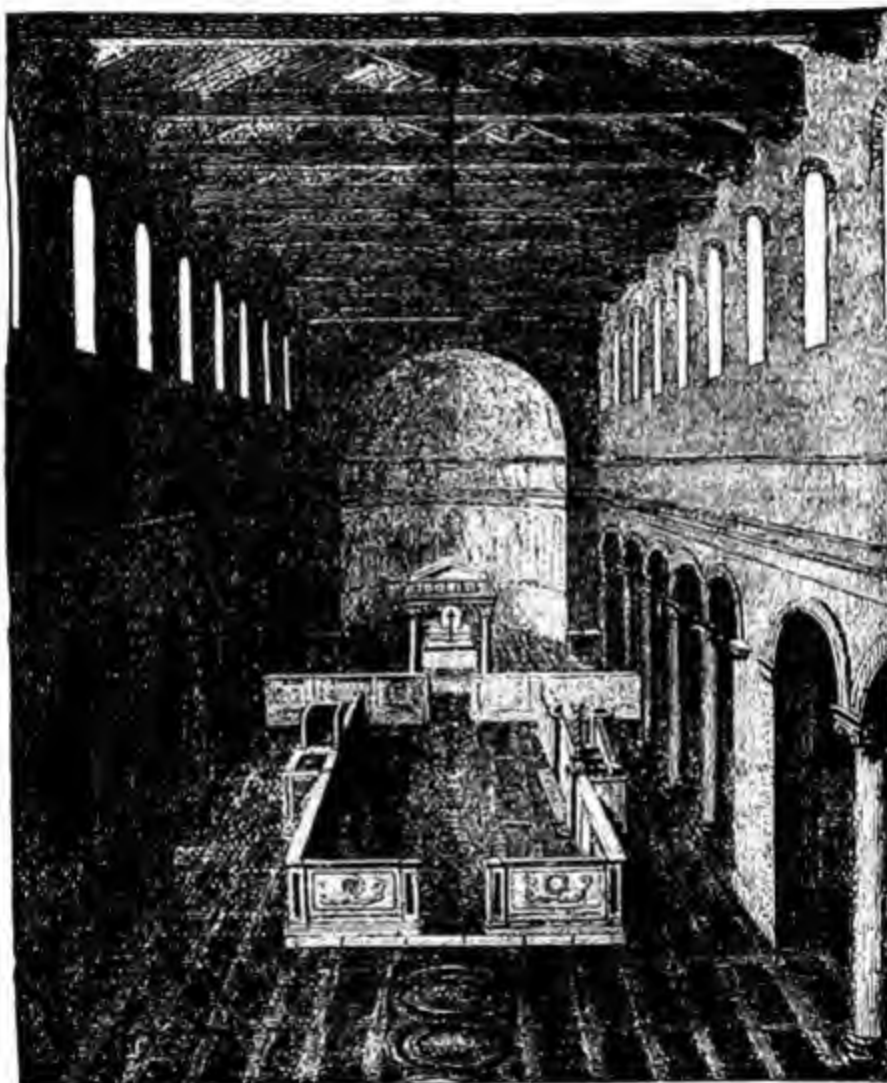
marble pulpit (Ambo) (*i*), richly adorned for the most part with mosaic, was placed on each side of the choir; from one of these the Gospel was read, and from the other the Epistle. In some instances only one such ambo was erected, and it then had two divisions, from the higher of which the Gospel was read, while the Epistle was read from the lower. The arrangement of the choir, with the two pulpits, is shown by the perspective view of the interior of the above-described basilica of San Clemente (Fig. 248).

The whole of the space which is shut off round the altar is designated the Sanctuary, and is raised by one or two steps above the level of the church. At both sides of it, at the end of the side-aisles, an especial place was occasionally shut off—namely, the Senatorium (*k*), for men of rank; and the other, the Matroneum (*l*), for women of rank.

§ 171. Adjoining the entrance there was frequently a narrow space, shut off by a barrier drawn breadthways across the building, designed as a locality for such penitents as had regained the right of access to the Sanctuary. This space was called the Narthex, or scourge. A portico (*m*) in front of the church, and other porticoes which surrounded an outer court (*n*) (Atrium, Paradise, Vestibule, Pronaos) were designated by the same name, and were intended for such penitents as were entirely out of the pale of the Catholic community. In the middle of this Pronaos was the Cantharus, or bowl for washing the hands, and intended as a symbolic type of the inner purification, which subsequently ensued from the sprinkling of the holy water.

§ 172. One remarkable peculiarity of basilicas is that a subterranean chapel, or crypt, for the reception of the bones of the saint to whom the church was dedicated, was constructed under the principal altar, which stood before the tribune. The word "principal" altar has been used advisedly, because in process of time side-altars

Fig. 248.



Interior View of the Early Christian Basilica of San Clemente at Rome.

were introduced in various positions. Sometimes this crypt is a mere vault, but more generally it is an architecturally arranged structure with pillars to support the vaulting: a sort of subterranean hall, which was probably suggested by the chapels of the catacombs at Rome. When these multifarious subterranean passages, which had

originally been excavated for the purpose of obtaining stone, were used by the persecuted Christians as places for refuge and burial, they made alterations which converted them into crypts, resembling chapels, to serve as a meeting-place for the congregation. Subsequently, when the Christian religion was recognized at Rome, larger churches were built over these graves of the martyrs, or over the entrances to the catacombs; and probably these sepulchral chapels suggested the idea of the construction of a crypt in other situations also, destined to fulfil the same offices as the structure from which it was copied.

§ 173. The form of the Christian basilica, as it has just been described, owed its origin more to customs and requirements which were necessitated by religious worship, than to artistic deliberation. Still, though on the one hand, an already vitiated, and on the other a still embryo art were instrumental in their construction, these basilicas produced on the whole a sublime and peaceful effect, which is principally to be ascribed to the beautiful simplicity of Christian architecture that pervades their principal features. The simple ground-plan of later Christian churches is more clearly and intelligibly traceable in the Basilica than it is in more elaborate structures.

The most characteristic feature in the basilica are the three, or sometimes five, parallel aisles, the length of each of which is easily recognizable, owing to the nave being higher than the side aisles.

§ 174. The ornamentation of the basilica corresponded with its architectural form. It did not consist of plastic sculpture, but of paintings and mosaics, which were introduced on the side walls of the nave, as well as on the so-called triumphal arch: but they were principally employed in the apse, which formed the termination of the church and the end of the whole perspective for the eye of a person entering the building (see Fig. 245). These apse mosaics generally represent large, detached figures, turned towards the spectator, wrought on a ground-work of blue or gold, with bold and simple drapery, and produce an imposing effect.

§ 175. Whilst the general impression is therefore significant, the appreciation of detail is entirely wanting in these early Christian edifices. The columns, which are generally of the Corinthian order,

were for the most part taken from older buildings of the heathen period, and differed in material and workmanship: sometimes even those of dissimilar dimensions were placed next each other. The intercolumniation, and even the breadth of the side aisle are often unequal, the side walls without ornament, while the entablature consists merely of the projecting ends of the beams; and generally speaking altogether a fine architectural feeling is wanting; but the low standard of an unæsthetic age is still more forcibly expressed by the meanness of the exterior of the basilicas with their bald walls and windows and doors devoid of moulding. The latter were generally covered with a horizontal stone with a plain arch-head to relieve the weight. Sometimes there was in front a portal resting on two columns and covered with a cross-arched vaulting, or a portico was introduced along the whole length of the façade. In spite of the unassuming simplicity of the external construction it is commendable that it seems to have been caused, at least in the main arrangement of its proportions, by a wish to render the characteristic expression of the interior, for the lower aisles are connected with the more lofty central portion by a slanting entablature corresponding to the roof. The material was for the most part brick, which was sometimes left quite plain, whereby the construction was emphasized, and at others received a marble coating, as for instance at the church of San Miniato at Florence (see Fig. 371).

The form of the Christian basilica which has been described was retained for several centuries in Italy, and especially at Rome. So true did the architects remain to the oldest models, that the buildings of the twelfth century are hardly to be distinguished from those which have been erected since the fourth.

§ 176. The most complete specimen of the arrangement of an ancient basilica is presented by that of San Clemente at Rome (Fig. 248). One of the most notable instances of a five-aisled basilica is that of S. Paolo, outside the walls of

Fig. 249.



Tower of the Early Christian Basilica of S. Maria in Cosmedin at Rome.

Rome, which was burnt down and subsequently rebuilt in accordance with the old plan.

During the later period of the construction of basilicas, an isolated tower, of a simple, rectangular shape, and with no taper, was often erected near the front façade of the building. Amidst the conflicting views which have been arrived at concerning the origin and object of this new construction, which first occurred in connection with basilicas, the supposition that it was originally intended to collect the congregation for service, may probably be correct; and the designation bell-tower, as answering to the Italian expression *Campanile*, may be suitably employed to describe it.

§ 177. In the period under consideration, chapels, convents, and other buildings, such as *triclinia*, or large halls for the reception of pilgrims were constructed in a style resembling that of the basilica.

There was, however, another usual form of church which was synchronous with the basilica and which must now be described. In this class of structure the principal and often the only constituent part of the building consisted in a space, which was generally round or octangular, covered with a dome; while sometimes a circular passage or other parts of the building abutted on it (Figs. 250 and 251.) But when the entire building does not consist of the one dome-covered space, it always constitutes the central portion; and the other parts abut on it.

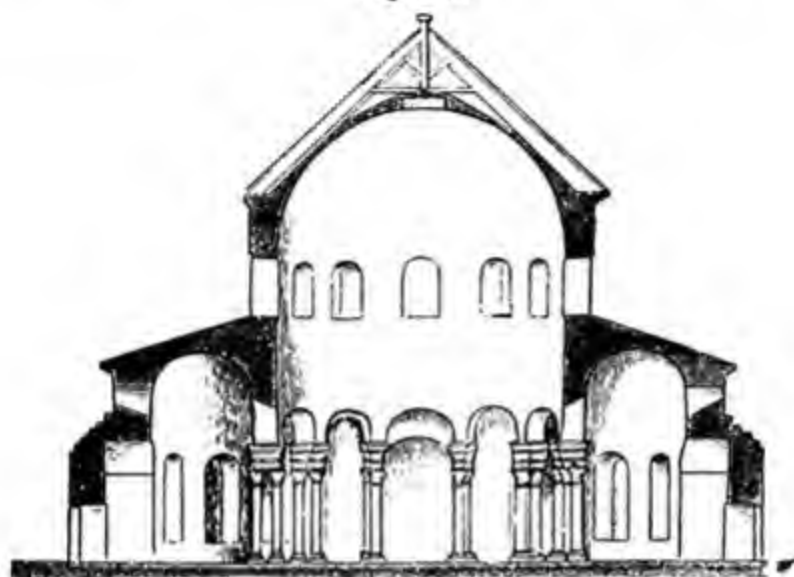
§ 178. The simplest descriptions of this kind of building are the baptisteries (Figs. 251 *a, b, c, d*), for which the ancient *Thermæ* furnished models. They generally have a circular or octangular ground-plan, a main space covered with a round or polygonal dome,* and a circular passage separated therefrom by pillars in the same way that the side aisles are separated from the main aisle in basilicas (see Figs. 250 and 251). Sometimes they were without this passage, and only had galleries running round the interior like boxes in a theatre. These buildings were generally erected in the vicinity of cathedrals.

Other churches were constructed in the West in a similar simple

* The dome is generally a larger or smaller portion of a cone, and in its simplest form rests on a circular or polygonal substructure.

way, but only in isolated instances; or sometimes in such a manner that several side domes, resting on pillars were grouped round the

Fig. 250.



Section of the Church of S. Constantia at Rome.

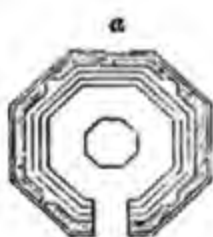
main dome: in which case the one which contained the altar always stood out prominently from the rest.

Fig. 251.



Ground-Plan of the Church of S. Constantia at Rome.

Fig. 252.



Ground-Plans of Baptisteries.

§ 179. This circular architecture only occurs in isolated cases in early Roman Christian architecture: on the other hand in the Eastern empire it became the prevalent form of church from the sixth, if not from the fifth century, and must be considered as the principal type of that architectural style, which will be considered under the name of the Byzantine in the succeeding subdivision.

§ 180. In the ornamentation of basilicas, as in all works of

Early Christian art, and particularly in the case of tombs, symbolic representations form a characteristic feature. It will not be inappropriate, with a view to a due understanding of the same, to consider some of the most usual and most important of these symbols or emblems.

Christ is naturally the principal subject of these symbols ; then come the Christian virtues and attributes.

The earliest and most universal is the sign of the Cross, to which the monogram of Christ was subsequently added. The fish was, moreover, an emblem of Christ, because the letters for *ἰχθύς*, the Greek word for a fish, taken as initials, give the words *Ἰησοῦς, Χριστός, Θεοῦ Υἱός, Σωτήρ* : Jesus Christ, the Son of God, Saviour.

A very favourite symbol is the lamb, whether as typical of Christ, with the addition of a Cross, or of the Apostles, or of all Christians, as the flock of the Good Shepherd. The Dove is the symbol of the Holy Ghost and of mildness and gentleness. The hart is an emblem of Christian longing, in consequence of the well-known verse in the Psalms : "Like as the hart desireth the water-brook, so longeth my soul for Thee, O God " ; the peacock, which was already an emblem of immortality for the heathens, retained that symbolic meaning among Christians ; the phoenix was a very natural emblem of the Resurrection ; and the cock of Christian watchfulness.

In the earliest times, when the Christians celebrated their worship in the depths of the catacombs, the angel, the lion, the bull, and the eagle, were already emblematic of the four Evangelists. A leaf is a very common symbol : the olive-leaf as sign of peace, sometimes with, and sometimes without, a dove ; the palm-leaf, as reward of victory for martyrs and the departed, because they had triumphed over death : the crown and the garland had the same signification : the vine-leaf was in early times the most favourite emblem ; the anchor and lyre were symbols of Christian confidence and joy ; the horse, a ship under sail, and footsteps were probably typical of the journey of life and the accomplishment of the Christian struggle ; the Rock was emblematic of our Blessed Saviour and of the character of firmness ; and the pitcher was a symbol of the agape or of Holy Baptism.

§ 181. Besides these shorter symbols, other more elaborate ones

are drawn partly from the Old and New Testaments, and partly from imagination.

Their artistic value is insignificant, and on a par with heathen productions of the later Roman period. Of Old Testament symbols the following are the most common : As a memorial of man's sinfulness, the Fall, with Adam and Eve at both sides of a tree round which is coiled the serpent : as typical of obedience, the sacrifices of Cain, Abel, and Abraham : as incentive to the hope of help in danger, Noah in the Ark on the approach of the dove, frequent representations of the prophet Daniel in the den of lions, and of the Three Children in the fiery furnace, and of the passage of the Red Sea : as proof of heavenly nourishment and strengthening, Moses striking water from the rock or receiving the Tables of the Law from the hands of the Lord : as symbolic of the Resurrection, the ascension of Elijah. An especial favourite was the story of Jonah, which combined several of these references, and representations of his sleeping in the gourd-booth, of his being swallowed by the whale and cast up again, were very frequent.

§ 182. The most important events in the life of Christ afford materials for emblems drawn from the New Testament : these only occur in works of a later period—such are representations of the Passion — of the crucifixion, the crowning with thorns, and the derision. Some of the miracles of the Gospel narrative were greatly in favour, as : the raising of Lazarus, the miraculous feeding of the people, the healing of the woman with the issue of blood, of the paralytic man, of the blind man : then more historic subjects, as the conversation with the woman of Samaria, the entry of Christ into Jerusalem, the washing of feet, Christ before Pilate, Peter's denial and leading away into prison, the delivery of the keys to Peter, &c.

§ 183. The favourite and most usual representation of Christ is as the Good Shepherd, generally in a shepherd's dress, bearing the lost sheep on His neck or caressing it : sometimes merely sitting amongst the sheep with a shepherd's staff or a flute. Besides these forms Christ is often represented without relation to a particular incident, generally teaching, surrounded by His disciples or the twelve Apostles, either sitting or standing on a mountain, from which issue four springs as symbols of the rivers of Paradise and of the Evangelists.

Christ is also represented as Orpheus, in a short garment, covered with the Phrygian cap, with the lyre in His hands and playing on it, sitting under the trees, whilst lions and camels and birds in the branches listen to Him.

God the Father is generally represented simply by a hand stretched forth from the clouds.

Whilst these representations are, it is true, well calculated to stir religious thoughts in the beholder, still their artistic worth must be described as insignificant, with the exception of a few pictures of Christ in the apses, which portray considerable grandeur and dignity.

II.

BYZANTINE ARCHITECTURE.

§ 184. After the separation of the Roman Empire into the Eastern and Western divisions (395 A.D.), a new order of things arose in the Eastern portion, and especially in its new capital of Constantinople. On the site of the ancient Byzantium, and with an infusion of oriental elements, the Byzantine style was consequently developed. The sixth century, which witnessed the reign of Justinian, was the most important for the formation of this new style. Soon afterwards the inroads of the Arabs and the conquest of whole provinces by that race began to exercise an influence on the form of Byzantine architecture. On the other hand Byzantine architecture had a reflex action on Arabian, as will be shown in the succeeding subdivision. The Crusades in the eleventh and twelfth centuries, and the supremacy of the Franks in the Greek empire which arose from those religious movements, tended to extend the scope of Byzantine architecture over other countries also. But when the old line of emperors returned they were unable to withstand the victorious inroads of the Turkish Sultan, and the Western Empire became the prey of the resistless Turks in the year 1453.

It has been usual hitherto to call Art in the west during the early period of its development in the Middle Ages Byzantine, but, although the influence of Byzantine forms is to be traced, it was far from stamping its impress on the western styles. The architecture of the Byzantine empire, properly so-called, has exclusively to be dealt with here, and the extraneous influence which it exercised will be considered in the fourth division of the second book under the head of Later Romanesque architecture. Moreover, owing to various causes, buildings were erected in other countries in the Byzantine style but these, although they do not belong to the national architecture of the

countries in question, must be classified with the buildings built in the prevalent style.

§ 185. Two epochs must be distinguished in Byzantine architecture. The first, which begins with Constantine and ends with Justinian in the middle of the sixth century, is that of the formation of the new style, till the completion of a settled system: domical construction is its essential feature.

The second and longer period exhibits a rigid imitation of the settled system, with an addition of oriental forms, and is finally, at least in some localities, subjected to the influence of Western Art.

§ 186. The essential element in the formation of the Byzantine style is the vault, which did not assume a free and independent character till it reached the Eastern Roman Empire; for hitherto in the west it had always been subordinate and unsuitable to the Græco-Roman columnar construction. Massive piers and wide arches with a dome rising over them in the main space, and vaulted side-spaces in connection with it: these are the prominent characteristic elements of the architectural design. Columns, if they were employed at all, were made to be subordinate to the main form of the vault construction, and were introduced between the large piers and the arches.

The construction of the vault influenced the whole structure of the building. The principle of vaulting that had already been introduced by the Romans, in which the walls no longer served as supports, but as enclosures, was carried to its utmost limits in the new Byzantine style: for the pressure and thrust of the vault, which is held together by the counterpoise on the opposite side of the dome and strengthened by buttresses, is distributed only on individual points.

The Roman decorative principle was, however, abandoned, inasmuch as a change took place in the individual details and in the manner of their application. Thus, for instance, projecting cornices, if not entirely given up, were only employed to crown the building, and its component parts, particularly intermediate cornices, became tame and flat in their outline. As only a subordinate position was allotted to the columnar architecture, the usual proportions of the columns and their capitals were abandoned and altered after an arbitrary fashion.

During the early period various ground-plans were followed in

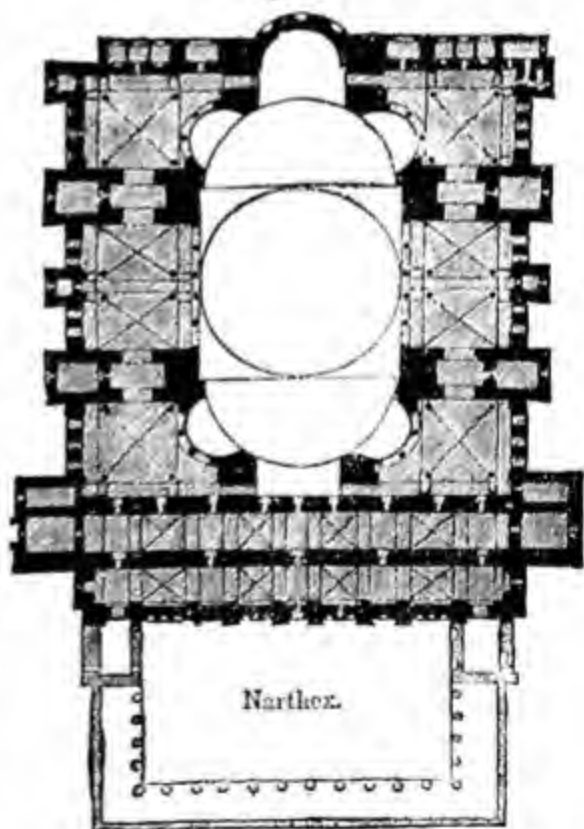
the construction of churches. Sometimes they were octagonal, after the manner of the West-Roman central style, at others they formed oblongs, approaching a square, with a dome over the centre.

§ 187. The Byzantine style of this first period reached its highest example and splendour in the church of Sta. Sophia at Constantinople. After this church, which was originally built by Constantine, had been burnt to the ground, it was rebuilt, with the utmost care, and at great expense, by Justinian. It remained a peerless model for all later buildings of this description, and was celebrated far and wide, not only for its size, but for the span of its vaults and the splendour of its decorations. A short description of this building will therefore explain the main characteristics which were subsequently universally followed, for though the proportions in other buildings of a similar nature were diminished, yet they were always constructed in accordance with the same plan, which will be rendered intelligible by Figs. 253, 256, and 257.

The external ground-plan of the building (Fig. 253) approaches a square, being 252 feet by 230 feet, in the centre of which four massive piers, connected by semicircular arches, form another square, and by means of triangular vaultings (pendentives) which span these arches, support a flat dome.

Right and left on both sides of this central square, as viewed from the entrance, stand four pillars, which are connected by arches, and support the women's gallery. On each of the open sides of the dome-covered square there abuts a semicircle

Fig. 253.



Ground-Plan of the Church of Sta. Sophia, at Constantinople.

with semi-domes of somewhat inferior height to the main dome. (Fig. 256.) These semi-domes are penetrated on each side by three smaller vaults (Fig. 254); the middle one of the three is a barrel or cylindrical vault (Fig. 255 *) and on the entrance-side forms the

Fig. 254.

Dome-System of the Church of Sta. Sophia
at Constantinople.

Fig. 255.



Barrel-Vault.

main-entrance, and opposite, on the further side, it forms the apse: whilst the two remaining vaults on each side assume the form of immense niches with semidomes, resting on two rows of columns one above the other.

In this way the whole inner space forms an oval nave, which is terminated towards the west by a vault with a square end, and towards the east by the apse: whilst in its height it appears as an entire whole, owing to the vaults of various descriptions and altitudes that radiate from the central dome.

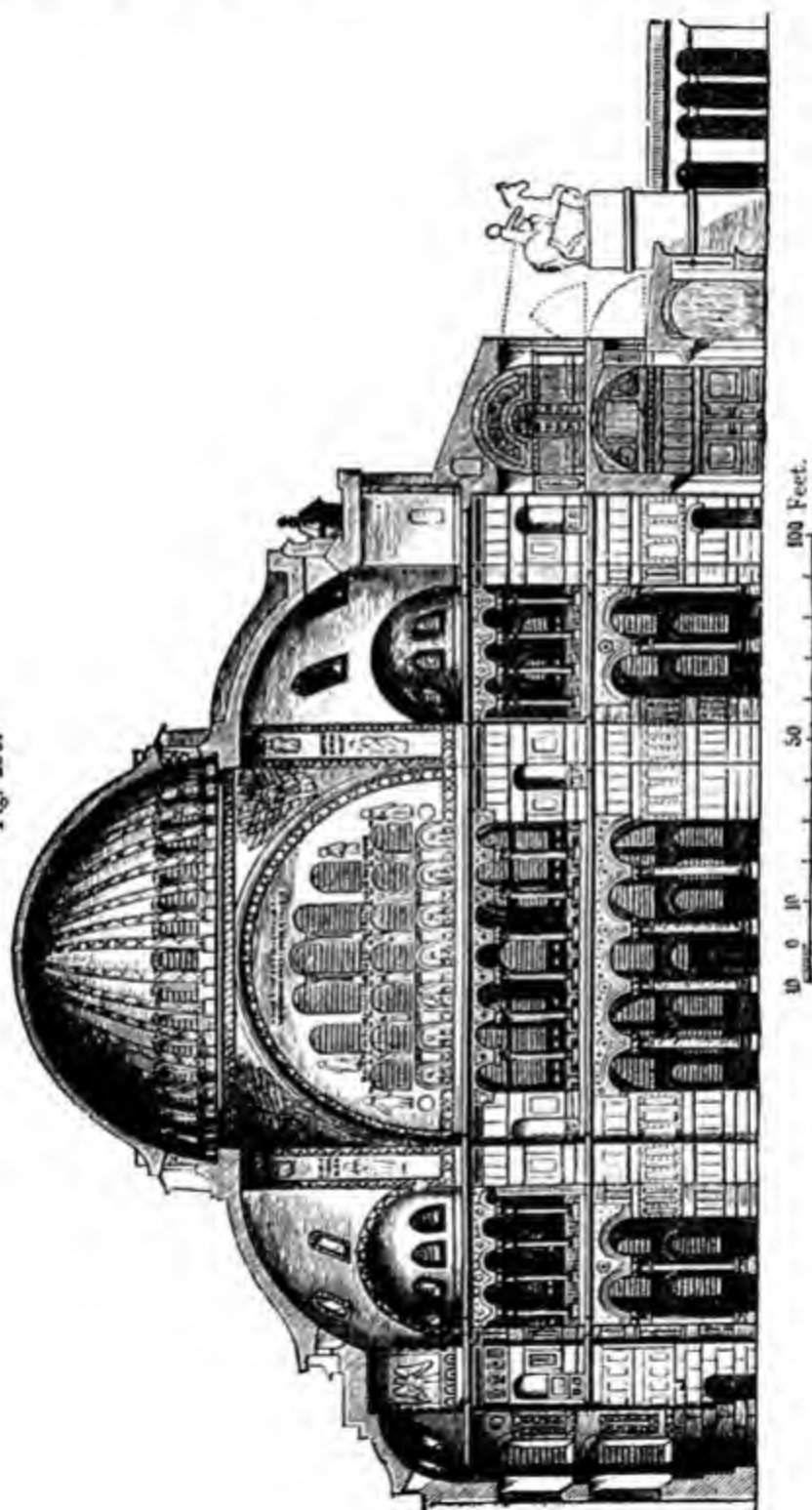
Round this lofty central space, except on the side of the altar, are ranged side-aisles of two storeys, which do not however assume the form of a continuous aisle, but are divided into three divisions on each of the long sides, in the second storey of which are the women's galleries, so that the whole does not appear an open space, but rather an oval hall with side-halls and arches. These two-storeyed aisles are shown in Fig. 253 by hatchings, and the nave in the middle, having been left plain, is brought out more prominently.

The embellishment was rich to the highest degree: the walls and piers, and even the floor, were inlaid with coloured stones, and the vaults were enriched with mosaics on a ground of gold, and the columns were constructed of various marbles of the most precious

* A barrel-vault is the prolongation of a semi-circular arch resting on two supports. When a square space is covered over in this way, the vaulting assumes the shape of a half cylinder or barrel.

kind. The nave was lighted from above by windows pierced in the main and in the semi-domes.

Fig. 256.

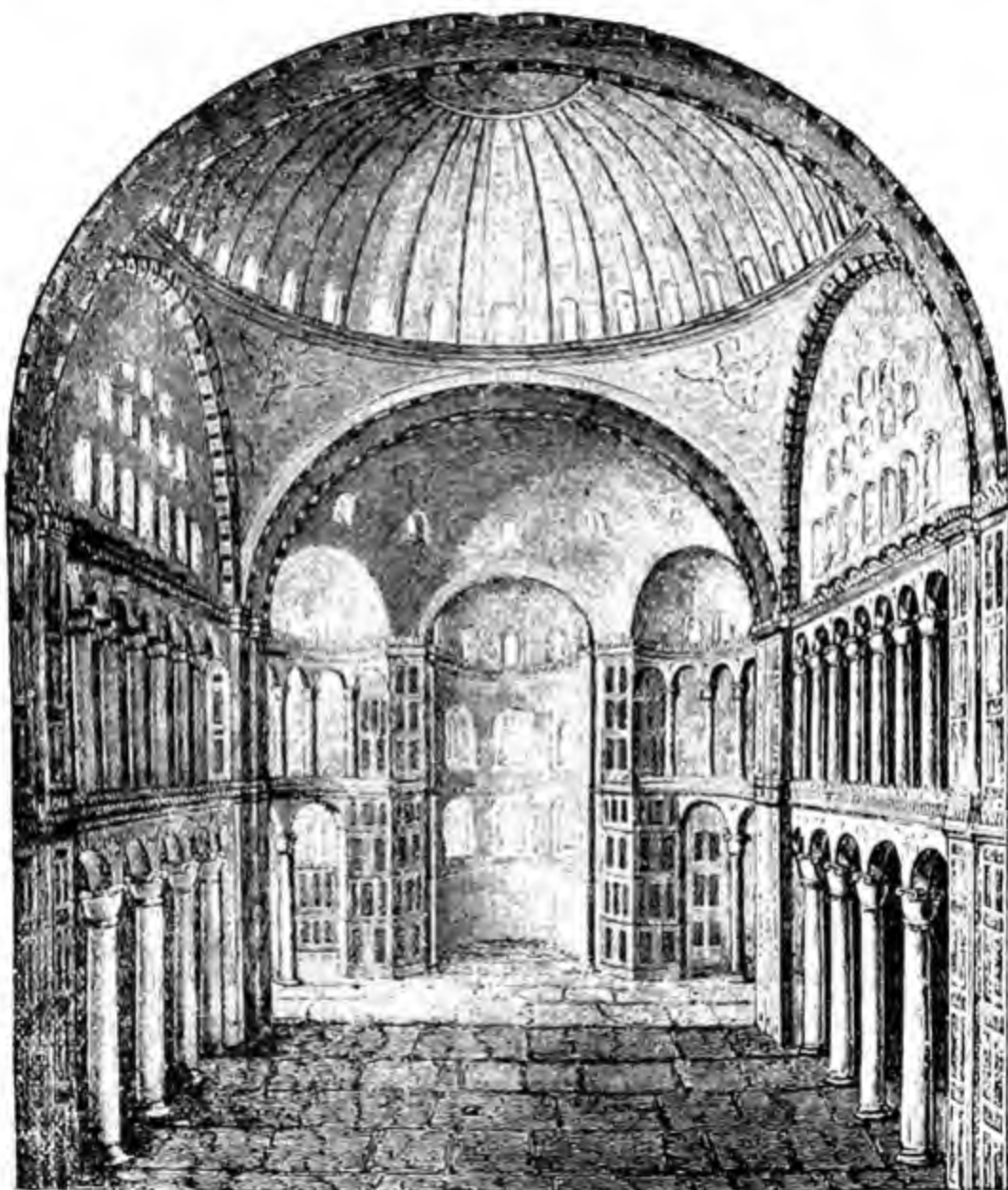


Section of the Church of Sta. Sophia at Constantinople.

The Capitals of the Columns are more fully represented in Fig. 225.

Besides the Narthex, there was a second vestibule : both extended the whole breadth of the building. In front of it was an entrance

Fig. 257.



Interior of the Church of Sta. Sophia at Constantinople.

court surrounded by a colonnade, which was entered through an arch resting on four pillars.

§ 188. The most striking point of difference in the impression

conveyed by the interior of this Byzantine church and the interiors of Roman-Christian basilicas is that while the latter carry the eye longitudinally to their apsidal termination, the former arrests it by the prominence of the central portion of the building; that is to say, by a stupendous dome constructed on a quadrangular substructure, in which all other details culminate. But notwithstanding this system of centralisation, and the majestic appearance of the dome, the perspective effect of length is not entirely abandoned, as it was in the case of octangular and circular buildings; which constructions were however, rarely employed for large churches.

Although the impression conveyed by this church is not so pure and simple as that which the basilicas produce, still its outlines are magnificent and imposing. The exterior displayed a novel divergency from the normal standard. Whilst hitherto the antique form of the roof had been preserved, it was now replaced by a totally different one: inasmuch as the vaulting, at least of the domes, was visible from the outside without any screen, or the only covering it had was one of polished metal. (Fig. 258).

According to this model it became the normal rule in buildings in

Fig. 258.



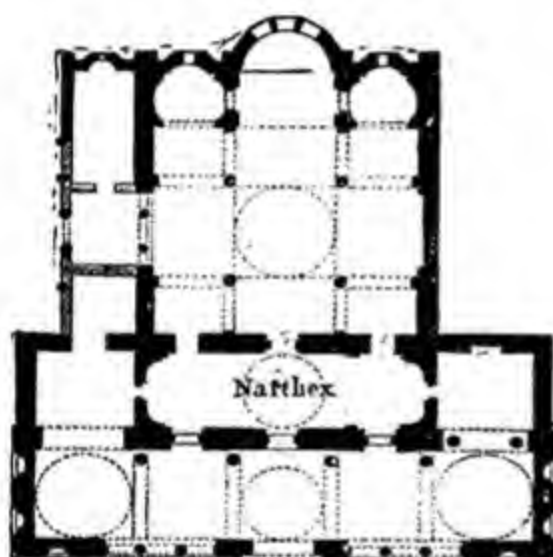
Exterior of the Church of Sta. Sophia at Constantinople.

the Byzantine style for the domes to spring from a square, and to introduce around it, except on the altar side, galleries for the women and to allow the vaulting to be visible externally.

§ 189. Contemporaneously with the church of Sta. Sophia,

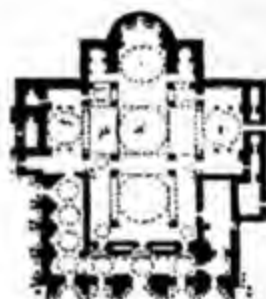
another form arose, which being subsequently frequently repeated, constitutes a second period of the Byzantine style, and forms the most eminent characteristic of Byzantine churches, namely, the ground-plan of the Greek cross with a vault-system consisting of five domes. The cross is formed by the intersection of the nave and transept, and a dome is raised on piers at the point of intersection, whilst over the extremity of each arm of the cross is a similar dome, only without windows. (Fig. 259.) The arms of the cross are often

Fig. 260.



Ground-Plan of the Church of the Theotokos, at Constantinople.

Fig. 259.



Ground-Plan of the Church of St. Mark at Venice.

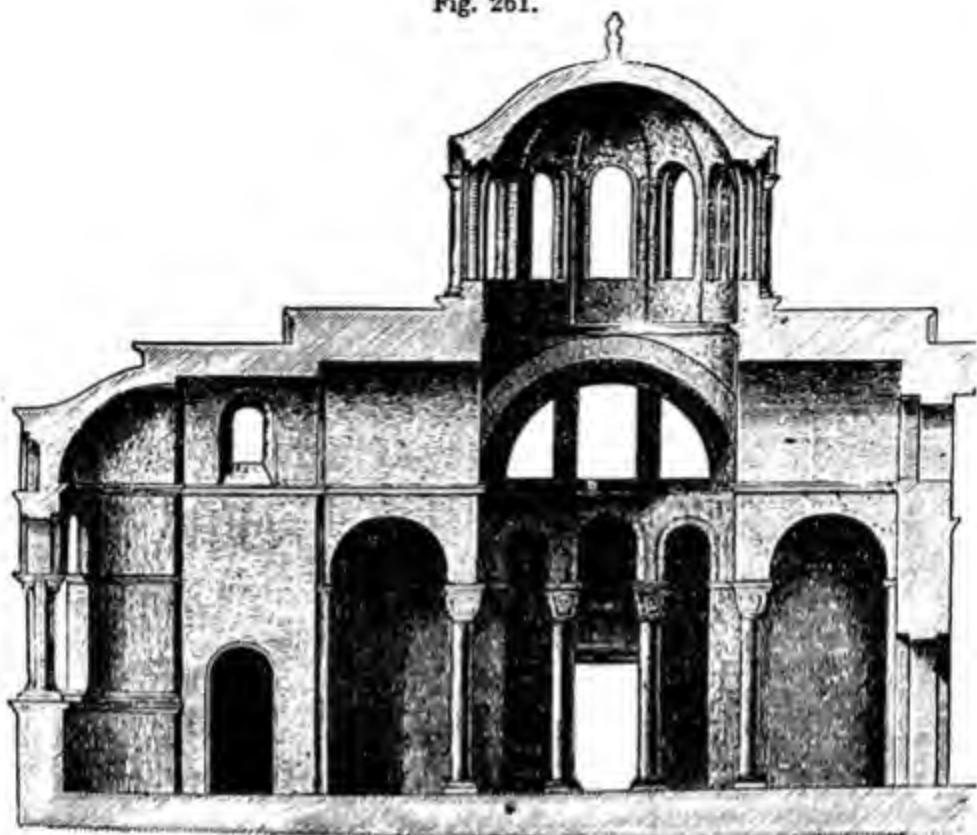
covered by a barrel-vault instead of a dome. (Figs. 260 and 261.) On the front side of the church there is generally a narthex, or a front-hall of considerable dimensions covered by vaultings.

But the ground-plan of a square with the central dome resting on piers or columns, and with four smaller domes at the corners, is more common and more characteristic of the Byzantine style. The women's galleries were then introduced between the principal piers, opening on to the central space.

As a rule, two small side apses were constructed on each side of the main apse: they were not, however, visible from the outside.

§ 190. The principal difference between these buildings and those of the first period consists in the treatment of the dome, which no longer, as in the church of Sta. Sophia, assumes the shape of a flat vault, but that of a hemisphere, whereas externally it often appears

Fig. 261.



Section of the Church of the Theotokos at Constantinople.

as a fiat vault resting on a perpendicular substructure. Whilst internally the windows pierce the vaulting, externally they are let into the vertical wall. (Fig. 262.) In this arrangement may be recognized the origin of the drum which subsequently became common in the west. In buildings of this period there are found, as has already been remarked, several domes in one building; sometimes three, but more often five; the four smaller ones either forming a cross with the central dome, or being introduced at the four corners.

§ 191. The vaultings are always without covering externally. Only in instances, where regard for climate or western influence have been brought to bear on their construction, are they covered with tiles or slabs of stone: and even then the shape of the various vaultings, whether domes, or barrel-vaults, or cross-vaults, remains almost always undisguised. The roofing of the church, beside the vaultings, consists either of plain slopes, or the outside walls are raised so high that they are only overtopped by the principal dome, whilst they

Fig. 262.



Façade of the Church of St. Taxiarchos at Cythrus.

screen the smaller ones, and so terminate the façade by a horizontal line. (Fig. 263.) The barrel-vaults of the arms of the cross were afterwards converted into circular pediments, and finally all the

Fig. 263.



Church of St. Nicodemus at Athens.

upper portions of the building were terminated by rounded lines only. The exterior always remained extremely simple, and the oriental

love of magnificence was in preference developed internally. Sometimes the uniformity of the façade was broken by alternate rows of tiles and stones, or of stones of various colours. The windows were introduced in the women's galleries, and were narrow, and covered by round arches, or a double window was formed by the interposition of a pillar.

§ 192. The walls of the interior were cased with costly marble, and in later times were ornamented with mosaics, representing either figures or arabesques, composed of very small precious stones or glass dice, and subsequently with frescoes: both the latter kinds of ornamentation were effected on a dark-blue, but afterwards always on a gold ground. Owing to this extensive employment of mosaics, a traditional style, both for design and colouring, was formed for these figurative representations, which may be called the mosaic style: it was, as has been shown, employed in the Roman basilicas, and had great influence over the plastic art of later times. In these mosaics the arabesques are of slender, intertwining patterns, whilst the representations of figures are stiff and conventional.

§ 193. The essential characteristic of the Byzantine style is therefore, in short, that the vaulting, and especially the dome, constitutes the main feature, to which all else is subordinate. With the Romans vaulting was associated with the Grecian column, and formed an isolated feature in their constructions, but in the Byzantine style it became an independent system; although its artistic productions may never have surpassed mediocrity as regards detail. It was a consequence of this system that the architrave of the Grecian orders, which is so essentially antagonistic to the vault construction, was entirely abandoned. The predominance of the dome and the vault was only a natural consequence of the development which this system was left free to assume by the abandonment of the outer roof and the association with the dome of the semicircle in place of the gable, at the termination of the outer walls.

§ 194. Besides the main design, many of the details of the Byzantine style present novelties and peculiarities, in which the wish for diversity and picturesque effect point indubitably to an oriental influence. The servile imitation of the Grecian column is abandoned new forms of capitals arise, which suit the vaulted arches better, and

evince more supporting power than the Greco-Roman would have done. This result is produced by the introduction of a kind of support placed under the arch at the top of the capital. (Figs. 264 and

Fig. 268.

Fig. 264.



From the Church
of San Vitale at
Ravenna.



From the Church of St. Mark at Venice.

Fig. 266.



From the Church of the
Theotokos at Constantinople.

Fig. 265.



From the Church of San
Vitale at Ravenna.

CAPITALS.

Fig. 269.



From the Church of Sta. Sophia at Constantinople.

Fig. 267.



From Marcian's Column at
Constantinople.

265.) This may be accounted as the most remarkable and most peculiar of the details of form in the Byzantine style. The capitals are of various kinds; generally with pointed acanthus leaves, and resembling the Grecian Corinthian column (see Figs. 266 and 267): others are like the capitals of the Composite order, as, for instance, Figs. 268 and 269. Capitals like that depicted in Fig. 265, short and cubical in shape, with trapeziform sides and incised foliage or other ornamentation, are peculiar to the Byzantine style,

In other respects the purely architectural details are very deficient, and are generally replaced by mosaic ornaments. A love of splendour and varied richness of colour predominates over the taste for the artistic working of architectonic details.

Byzantine ornaments are in general to be distinguished from those of the Grecian and Roman styles, to the former of which, as well as to Asiatic sources, they owe their origin, by a rougher and more unpleasing treatment, and by the leaves in the sculptures being deeply indented, sharp-pointed, and hollowed out in the middle. The running foliage is generally poor and uninterrupted.

§ 195. The forms which have been described are in use at the present day in the construction of churches in Greek Catholic countries; namely, a square or oblong ground-plan with a dome visible from the exterior rising on four piers over the central space, and having cylindrical vaults over the sides and small domes over the corners, and as a rule three apses. The narthex, also, is not wanting, and it sometimes has a portico in front of it.

Such are the regularly recurring elements of most Greek churches, though here and there some modifications occur, as, for instance, the separation of the sanctuary from the main-space by traverse-walls.

§ 196. No remains exist of Byzantine palaces, and we only know by the description of Byzantine writers that they were richly adorned with costly materials, such as precious stones and mosaics. On the other hand, Byzantine buildings of another kind have escaped the ravages of time, namely, the Cisterns, which were constructed principally in Constantinople and Alexandria as early as the time of Constantine. They are large reservoirs, covered with little domes or cross-vaultings, resting on columns. Sometimes several shafts were placed one over another. In connection with these cisterns were large aqueducts, after the manner of the Roman.

§ 197. Byzantine Art gained a footing also in the West. Italy especially, even after the division of the empires, and after the separation of the churches, still maintained relations and intercourse with the East. Many Byzantine elements were communicated to the rest of the West by trade, and in later times by the Crusades directly whilst indirectly they passed thither through Italy; and here and there buildings in the Byzantine style are to be found, either pure or modified.

In this respect Ravenna, on the east coast of Italy, is most remarkable, which for a long time was under Greek rule, and was therefore subjected at the same time to the influence of both Rome and Constantinople. The church of San Vitale deserves especial mention, which was built at very nearly the same time as the church of Sta. Sophia at Constantinople. It forms an octagon with a dome resting on eight piers; the spaces between these piers form niches, covered by semi-domes, with two rows of arcades one above another, cutting into the main domes; as in the church of Sta. Sophia. (Compare Fig. 257.)

In the north-eastern parts of Europe and in Asiatic countries the Byzantine style spread simultaneously with the Greek church, and exercised a great influence over the formation of native Art, as, for instance, in Armenia, and Georgia, and in the Russian empire, in which countries the working of Byzantine style merits a special consideration; the influence that Byzantine Art exercised over Arabian architecture will be considered in that portion of the work to which it properly belongs.

BYZANTINE ARCHITECTURE IN ARMENIA AND GEORGIA.

§ 198. Church architecture in these countries must be viewed as an offshoot of the Byzantine style. The Byzantine typical plan

is sometimes found combined with the basilica; while the dome in the centre of the building, the barrel-vaults of the side portion, the construction of the apses and sometimes the narthex are all accepted.

The churches of Armenia and Georgia, which were built in the tenth and eleventh centuries, show a deviation from this form. Their plan is a parallelogram, from which the apse, if it is not concealed in the thickness of the wall, and the gateways project

Fig. 270.



East Façade of the Church, Fig. 271.

polygonally. Sometimes, instead of these projections, there are triangular recesses in the walls as shown in Figs. 270 and 271. The roofs of the aisles slope from the wall of the nave as in Western buildings.

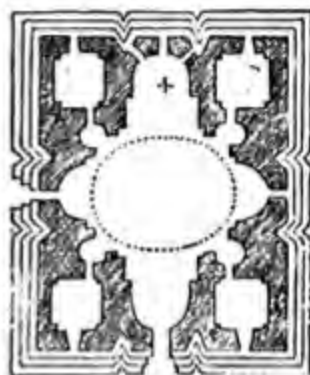
The doors generally have circular or horse-shoe arches over them, although in later times they were pointed or pyriform. The windows, which are as narrow as loop-holes, have sometimes straight and sometimes circular heads, and are often surrounded by ornaments, which do not lay claim to any importance, and which, in the more important churches are freely introduced on the archivolts, cornices, and doors. Intertwined lines, as shown in Fig. 272, enriched with foliage, are of very frequent occurrence.

§ 199. The exterior walls are, generally, as in many Byzantine churches, relieved by half columns, connected by arches, which have the appearance of marking off the wall into several subdivisions. Fig. 273 shows the capital of one of these columns, which seldom occur in any other part of the building. The cornices consist of full and massive mouldings.

As regards the exterior, it must be remarked, that where the basilica construction has been retained, a sort of transept extends right and left from the dome, the gables of which resemble those of the western and eastern façades.

§ 200. The central dome rests either on four independent piers; or, when the central form predominates, on the walls which slope inwards, so that totally disconnected spaces are formed at the corners, which, so far as concerns the impression conveyed by the interior, might

Fig. 271.



Ground-Plan of a Church at Vagharschabad.

Fig. 272.



Part of an ornamented Window-casing.

Fig. 273.



Capital of a Column.

as well not exist ; in fact, internally no endeavour is made to produce any perspective effect. A polygonal form also occurs, with a number of niche-like projecting buildings corresponding to the number of the sides.

The main dome is not spherical but conical in shape, and vaulted with layers of stone projecting one over the other.

RUSSO-BYZANTINE ARCHITECTURE.

§ 201. RUSSIAN architecture may properly be called a deterioration of the Byzantine style, though it was modified by many influences, and deviated considerably from it. It has maintained its peculiarities and errors of taste for centuries from the time of its formation from the Byzantine style down to the present day.

The Slavonic races that dwelt in the broad expanses between the Adriatic and Black Seas and the Baltic, which were intersected by forests, morasses, and steppes, had received the first germs of their civilization by their intercourse with the Byzantine provinces; and Byzantine architecture found acceptance, owing to the building of numerous churches by order of Vladimir the Great (981—1015), in whose reign a general profession

Fig. 274.



Cathedral of the Assumption at Moscow.

of Christianity took place in Russia, whilst that sovereign had continual intercourse with Constantinople.

The nature, however, of the country and of the people was not

Fig. 275.



Cathedral Church of Vassili Blanskenoy, at Moscow.

conducive to a national development of the elements which had been implanted. A further obstacle was presented by the inroads of Mongols from Asia, and their establishment in the country under the rule of Ghengis in 1237. After their ascendancy had been overthrown by Ivan III. (1462—1505), and the relations between Russia and Constantinople had ceased with the capture of the latter city by the Turks, that emperor procured artists of all kinds from the West, and particularly from Italy, for the erection of the numerous buildings which he caused to be constructed; amongst others was the celebrated architect, Fioravanti, of Bologna, in the year 1475, who was summoned to build the still existing church of the Assumption at Moscow, exactly after the model of the cathedral of Vladimir, which was the oldest metropolitan church of Russia, and therefore it is in only in some few details and in the improvement of the proportions that the better taste of the Italian architect is perceptible.

§ 202. It is only at the end of the fifteenth century that Russian architecture begins to exhibit a divergency from the Byzantine; for then forms crop up that denote a Tartar origin, as the bulb-shaped dome, &c.

In the sixteenth and seventeenth centuries Russian architecture assumed a highly peculiar form, to which the church of Vassili Blanskenoy, at Moscow, with its fantastic shapes, greatly contributed (Fig. 275). In this building the merit both of art and style had fallen even lower than before.

§ 203. The first churches were built at Tchernigow, Kief, and Novogorod, during the first half of the eleventh century, after the model of the church of St. Sophia, by Byzantine architects and workmen. A deviation, that had already been introduced into the Byzantine style in the Eastern empire (see § 195) became the indispensable type for all large churches of this description up till the present day, namely, the construction of five domes in such a way that the four lesser domes are introduced over the four corner spaces of the square that forms the base.

§ 204. Russian architecture displays its most peculiar feature in the shape and number of the domes; the diameter of which often exceeds that of the drum that forms the substructure. These domes

no longer have a regular spherical shape, but run up into a point at the top, while the sides have swelling curves in the shape of a pear or bulb, and some are even broader and flatter than those objects. The turriform substructure becomes still higher and slenderer with these bulb-like domes.

The number of the domes is increased in buildings which have pretensions to magnificence, in such a way that either all the domes form part of a central system, the lesser domes being grouped round the central one, and diminishing in height as they recede from the centre, and arranged on parallel or diagonal lines which form squares, or several square centralized systems of domes are introduced contiguous to one another. At the top of the dome is a gilt cross, which often springs from a half-moon, and from it gilt chains hang down and are fastened to the dome.

The impression of this mass of domes is heightened and rendered more grotesque by the application of colours. The roofs which are covered with sheet-metal are painted yellow, red, or white, whilst the domes themselves are green or blue, studded with gold stars, or entirely gilt or silvered: the central ones being more richly decorated than the outside ones.

§ 205. The exterior surface of the walls is broken by slightly projecting pilasters, but in other respects it is tasteless. The windows are small and covered by a circular arch or by two connected together; the ends of which have no supports. They are

Fig. 276.



Hip-roof with superincumbent Domes.

often introduced in two rows one above another, which seems a meaningless imitation of the Byzantine double row of windows which was necessitated by the women's galleries.

One characteristic peculiarity in the construction of Russian churches consists in the hip-roof, in which the main dome at the top and the side domes at the corners, being raised on drums, terminate in a very unartistic manner (Fig. 276)

§ 206. The domes are supported in the interior by lofty piers, either circular or angular. The plastic portion of architecture is

entirely wanting, inasmuch as no sculpture exists in Russian buildings. The principal divisions are only embellished by painting and gilding. The chief ornament of the interior consists of the iconostasis, which is a high screen reaching as far as the vaulting, and shutting off the altar from the congregation. On this iconostasis are painted pictures of saints in three or four horizontal compartments, according to an arrangement which is fixed and sanctioned by ritualistic use. The figures are painted on a gold ground, with gold and silver drapery, and always in accordance with one normal type, and the whole screen is scantily lighted by lamps. In other respects the interior is generally dark and gloomy.

§ 207. Bell-towers (Fig. 277) are generally detached from the church, and it is only in quite modern times that they have been connected with them. They generally consist of several diminishing storeys, either circular or octagonal in shape, which usually, but not always, have a square base. They are frequently crowned by an obelisk, terminating in a bulb-shaped dome, like a gigantic steeple-knob.

§ 208. Even in the later Russian style, which retains few reminiscences of the Byzantine, the circular arch is prevalent; and is introduced for the roofing of the inner spaces, in the form of a barrel-vault, without the cross-vaulting being used. It is only in external details that the keel-arch is met with, which is of such frequent occurrence in the Mahometan buildings in Persia and India, and which consists of two vaultings uniting in one point. (See Mahometan Architecture, Fig. 283.)

§ 209. In the reign of Peter the Great, at the beginning of the eighteenth century, the vitiated taste of the West found its way to Russia, and by encroaching on the native fantastic architecture, if not entirely supplanting it, it followed the same course as it did in other countries; and it is only quite lately that an imperial edict

Fig. 277.



Bell-Tower.

has been promulgated to retain the old Byzantine style as much as possible in Russian churches. Russian architecture can only produce an advantageous effect for the æsthetically cultivated eye when cities are viewed as an entirety, for then the great variety of the numerous variegated towers and domes, although quaint and wanting in repose, has a rich and imposing effect.

III.

MAHOMETAN ARCHITECTURE.

ARABIAN ARCHITECTURE IN GENERAL.

§ 211. DURING the course of the seventh century, A.D., the religion of Islam, which had been founded by Mahomet, united in a short space of time the nomad tribes of the Arabs, who had hitherto lived in wild freedom, into one mighty people, which spread this new religion from the Atlantic to the Ganges.

The want of buildings for the new worship necessarily called into existence the architectural and artistic elements amongst these united races. But since the roving life which they had led was little calculated to foster art, or effect an independent civilization, they were obliged to appropriate and use for their own purposes the existing forms of art in the various countries over which they disseminated the creed of Mahomet. These forms, however, were transmogrified in the hands of the conquerors according to their own genius and taste, so that the Arabian style was gradually developed out of the forms which were found ready to hand, and which belonged for the most part to Early Christian art of the later Roman period, together with an admixture of Asiatic elements. This style, however, received a different impress in the various countries in which it was developed: thus, for instance, in Egypt it was blended with the rigid conformity of the Egyptian, and in India with the voluptuousness of the Indian.

Arabian architecture was developed on the basis of the Early Christian, that is to say, on that of the basilicas of the Byzantine style.

Its formation and peculiarity, apart from the influence of the fantastic genius and lively imagination of the Arabs, was necessarily in

part determined by the fact that every kind of figurative representation, whether of man or animal, is forbidden by the Mahometan creed

§ 212. In the earliest times Christian churches were made use of for the practice of the new religion. It was only when the whole of the East had become united through Islam that independent Arabian art was developed. After the empire of the Caliph had spread from the confines of India to Spain, Arabian architecture diffused itself from Bagdad as a centre by the erection of many splendid palaces and mosques. These last-mentioned buildings, however, did not have such an effect on the formation of the style as was the case with the sacred buildings of nations professing other religions, whose worship required certain settled forms.

Mosques, however, have also their essential parts, that must never be wanting: but their design is not normal, and consequently the main form of the mosque is not a settled one. The requisite parts of a mosque are as follows: the *Mihrab*, or Hall of Prayer, which mark the direction of Mecca (*Kibleh*), and which must consequently have had a different position in different countries; then a place for the ablutions, which precede prayer; and finally a large space for the entry and departure of the faithful, for the reading of the Koran and prayers. In this space are the *Maksura*, or seat of the Caliph, when one was required; as also a place for the preservation of the Koran, and finally the *Mimbar*, or kind of pulpit. A further requirement is the *Minaret*, a kind of tower, from which the *Iman* calls the hour of prayer, and of which the larger mosques generally possess four or six.

§ 213. Two main forms are noticeable in the design of mosques. The one, which belongs to the western countries of Islam, and is the older of the two, is a lengthened square shut in by walls and surrounded with arcades on the inside, without a roof, and often planted with trees (Fig. a, 278). A well (b) covered by a cupola always constitutes one of the chief ornaments of this court-like space. On one side is a covered building (A), in which are introduced the hall of prayer (d) and the sanctuary and pulpit (e), and which often consists of several rows of arcades running one behind another with a flat roof.

Besides the portals and battlements, the only ornamentation that

the exterior receives is the slender tower or minaret (f, Fig. 279). There seems to be no fixed rule for its position. This design

Fig. 279.



Part of the Section of the Mosque of Ibn Touloun at Cairo.

Fig. 280.

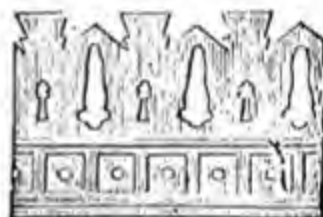
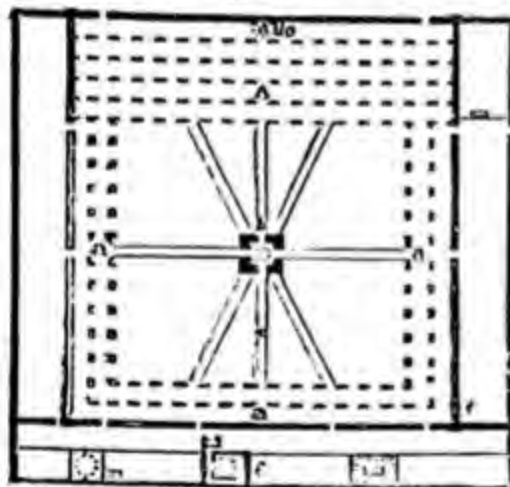
Detail of the External Battlement marked *y* in Fig. 279.

Fig. 278.



Ground-Plan of the Mosque of Ibn Touloun at Cairo.

Fig. 281.

Detail marked *x* in Fig. 279.

seems more important, when the Mausoleum of the founder is connected with it, rising in a high vaulted dome over the main body of

the building. The buildings and arcades are covered with domes of various shapes.

§ 214. In the other kind of mosques, which are constructed on the model of the Byzantine style, the body of the building forms an independent and separate feature, in which the main space, as well as the side spaces, are covered by vaultings in the Byzantine fashion, the roof of the former being a dome. The outer court, surrounded by arcades, also occurs, and these arcades have likewise small dome-vaultings. The exterior is more gracefully constructed, and the introduction of several minarets, from two to six, at the corners, has an elevating effect. Although a Byzantine model is recognizable in the main design, still an Asiatic, and chiefly Indian influence is unmistakable in the external forms, and especially in the domes.

§ 215. Taken as a whole, Arabian architecture, in accordance with the oriental manner of life, may be described as internal rather than external; especially in palaces and dwelling-houses. Whilst the tasteless exterior of buildings only displays to the eye high walls which are irregularly pierced by small windows, and those few in number, everything in the interior is richly decorated. The richest ornamentation is lavished on the most essential part of these buildings, namely, on the porticos which surround the open court. There are no fixed orders or proportions for the pillars, as there are in Grecian and Roman architecture: sometimes they are squat and heavy; at others slender and graceful, especially in the later period.

§ 216. In the different countries which were subjected to the sway of the Arabs, three different forms of arches, besides the circular arch, which is of rare occurrence, are met with in the arcades, and in connection with the doors and windows. In Egypt and Sicily occurs the pointed arch (Fig. 282), which consists of curves, and resembles the arch, which was subsequently employed in the West in the Pointed or Gothic style, only that it is more elliptical. It occurs in monuments which are perhaps rightly attributed to the earliest period of Mahometan architecture: but there is no doubt that it is met with in buildings which belong to the beginning of the ninth century.

In Persia and India the keel-arch occurs (Fig. 283), which differs slightly from the pointed-arch, the ends of the curves being bent

slightly upwards, in the shape of the keel of a vessel. In Spain the horse-shoe arch (Fig. 284) is the most frequent form, which consists of a larger segment of a circle than that formed by a semicircle.

Fig. 282.



Fig. 284.

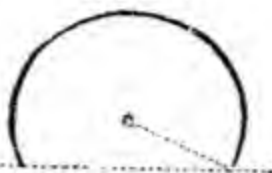


Fig. 283.



Arabian Arches.

These different forms of arches were not architecturally determined and systematically carried out in the various buildings in which they occur, but employed rather in an arbitrary manner.

§ 217. The walls over these arches are covered, as all flat surfaces

Fig. 285.



Moorish Wall Decoration in the Alhambra at Granada.

generally were, with embellishments in the shape of arabesques, which either consist of flat relief in stucco, or are painted in lively colours.

Fig. 286.



Fig. 287.



Moorish Wall Decorations in the Alhambra.

They are formed of the most multifarious entwinings of straight or

Fig. 288.



Wall Decoration from the Alhambra at Granada.

curved lines or belts, sometimes bearing a resemblance to vegetable forms, as Figs. 285, 286, 287, and 288 demonstrate. Each of these patterns is extended over considerable surfaces. A brilliant but not a staring general effect is produced, in spite of the lively colours, which must be attributed to the fact that each colour is spread over a very small surface, and consequently does not become too prominent.

In conformity with religious regulations, the ornamentations never express a symbolic meaning. On

the other hand, numerous inscriptions form an essentially characteristic part of the embellishment of Saracenic buildings: they are principally passages from the Koran, or proverbs, and are introduced in the principal parts of the ornamentation. The inscriptions of the older style, in the Kufic character, so called from Kufa a town on the Euphrates (Fig. 289), is ornamental in form, and blends harmoniously with the other embellishments. At a later period the Italic character (Fig. 290), which is less stiff, came into use for the same purpose.

Fig. 289.



Kufic Character employed as Decoration.

Fig. 290.



Italic Character employed as Decoration.

§ 218. For the roofing of buildings straight beams and vaultings were both in use. For the latter Arabian architecture has created a quite peculiar and highly characteristic form. The vaulting consists of small cavities, or miniature domes, which rise one above another till the topmost forms a kind of point at the top (Figs. 291 and 292). The effect of these vaultings, which resemble stalactite grottos, and which are richly ornamented with colouring, is complicated rather than worthy of imitation. Properly speaking, they do not deserve the name of vaultings, inasmuch as they have nothing in common with that kind of construction, and should be considered rather as fantastic eccentricities. They almost always consist of plaster or wood and are strengthened by beams and roofing.

The domes are for the most part flat and plain externally, or ornamented with stripes like a gourd; in buildings of importance they are larger, and either semicircular or tapering.

It now remains, after the above remarks on Arabian architecture in general, to describe the peculiarities of style which arose in the various countries in which Saracenic buildings were erected.

Fig. 292.



Perspective View of part of a Vault formed by small superincumbent arches.

Fig. 291 a.



Section of part of the Roof of the Capella Palatina at Palermo.

Fig. 291 b.



Profile of Fig. 291 a.

2. ARABIAN ARCHITECTURE IN SPAIN.

§ 219. Spain was conquered by the Arabs in the year 711 A.D., and in 755 Abd el Rahman founded an independent Arabian empire in that country, and after he had reigned for thirty-five years began to adorn his capital, Cordova, with buildings; especially by the construction of a large mosque; and Arabian architecture in Spain may be said to commence with that structure. The Roman style that was prevalent in the country was to a certain extent retained, and the fragments of Roman buildings were employed in the new structures.

The most flourishing period of Arabian art in Spain was during the reign of Abd el Rahman III., from 912 to 961, under which monarch Cordova reached the highest pitch of its splendour. He caused buildings to be erected in many of the cities of the country, especially in the newly-founded town of Zahra, in which the simple

forms of the earlier centuries appear already giving way to rich and fantastic shapes. In the same way as the Roman style had at first formed the model, so now the Byzantine style was preferred, on account of its yielding richer forms. But independent features were employed in connection with these Byzantine elements, and forms, which were quite peculiar to the Arabs, such as the horse-shoe arch, were mingled with them. The relations with Byzantine art were finally entirely broken off, when after long internal struggles with the Christian knights, Arabian Spain passed under the yoke of the African Moors, and Morocco became the seat of government.

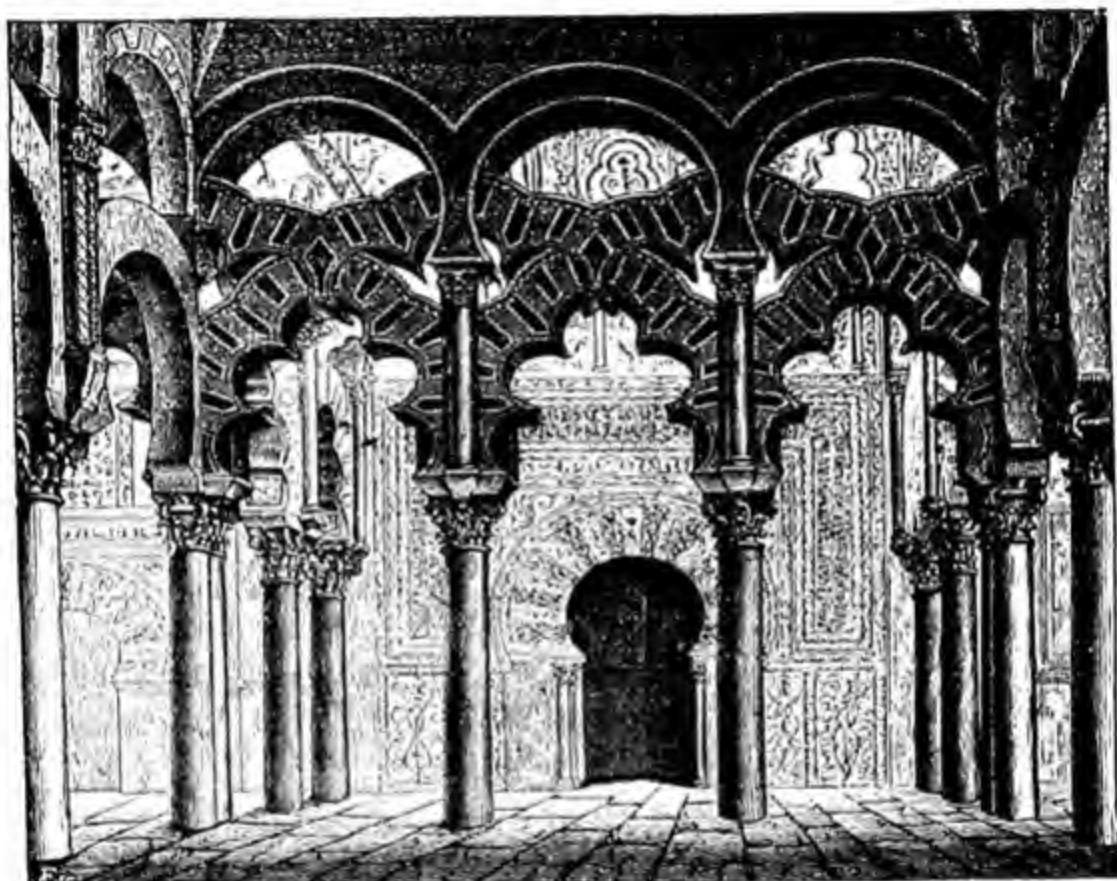
§ 220. Buildings were erected at Seville, as well as at Cordova: and amongst these the Minaret, which is called the Giralda, is especially remarkable. It was erected in 1195, and is still in existence; in it the forms of the Early Arabian and Byzantine styles have already disappeared. The Alcazar is also worthy of notice, and though it has undergone many changes through subsequent restorations, still it exhibits essentially the same forms as the Giralda. For instance, the capitals, which are still Corinthian, are of a graceful, slender shape, instead of being heavy, as heretofore, and the arches assume a pointed character instead of the broad circular. They never, however, take the shape of the simple pointed arch, but are indented at the top and on the inner sides with various little arches. Similar towers to the Giralda are found at Morocco, Tunis, and Tetuan, whilst the minarets at Cairo and in the East are different.

§ 221. Whilst the Arabian buildings at Cordova (Fig. 293), as well as similar isolated remains in other towns of Spain, belong to the first period of Arabian architecture in that country, as is evidenced by their clumsy application and imitation of Roman and Byzantine forms, the buildings at Seville belong to the second period, which was that of the freer development of the strictly Moorish style; although it still retained some reminiscences of earlier times. In the third period the forms were entirely independent, and were also richer and more peculiar, and the buildings were characterized by variegated and magnificent ornamentation. This style is illustrated by the buildings of Granada, and, above all, by the Alhambra.

It was only during the latter period of Saracenic rule in Spain, after Cordova and Seville were again in the possession of Christian

kings, and Andalusia had become the last place of refuge for the Mahometan population, that Granada, which had been founded in the tenth century, became powerful and important as the point of concentration for Moorish power and civilization in Spain, and as the

Fig. 293.



View of the Interior of the Mosque at Cordova.

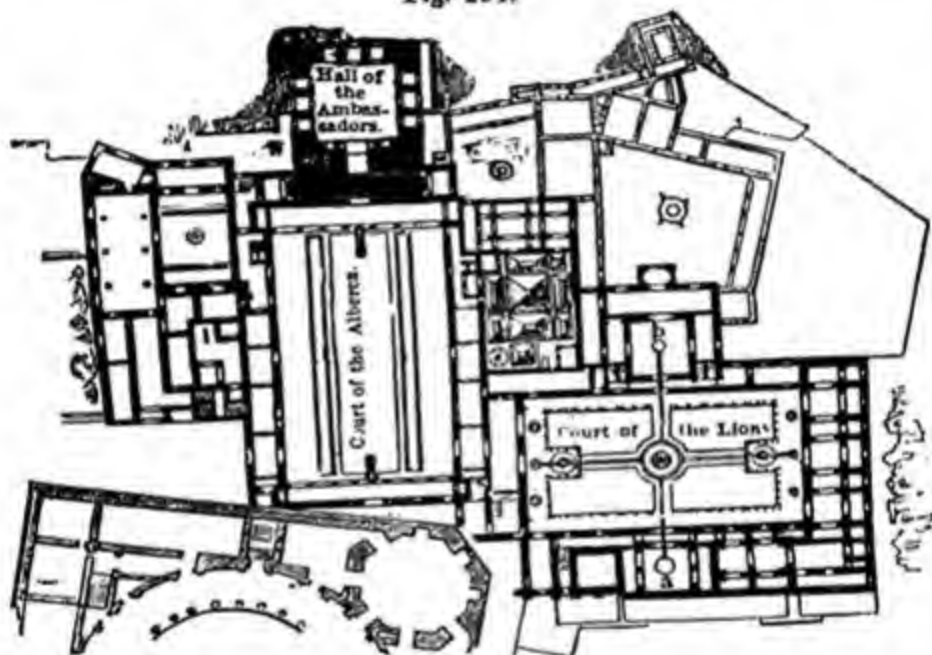
seat of a brilliant court and a school of arts and sciences. The city attained the zenith of its splendour in the fourteenth century. But small remains exist of its numerous palaces. Besides the Generalife, which is a graceful garden-pavilion in the style of the Alhambra, only the Alhambra itself remains as the most important and best-preserved specimen of its romantic splendour.

§ 222. The Alhambra forms a portion of the town which was entirely surrounded by fortifications; in fact, the citadel on which were built, besides the royal palace, public buildings and the houses

of the court officials, and displays externally only the walls and towers of a fortress. The castle was founded in the thirteenth century, during the reign of Abou Abdallah ben Nassar, who died in 1270. But the richest and most beautiful parts of the building which are still remaining, were carried out by Abou-el-Walid (1309—1325), and by Abou Abdallah (1325—1391). One of the last kings, Muley Hassan (1445—1453), only added some smaller portions.

Though part of the castle was turned into a modern palace under

Fig. 294.

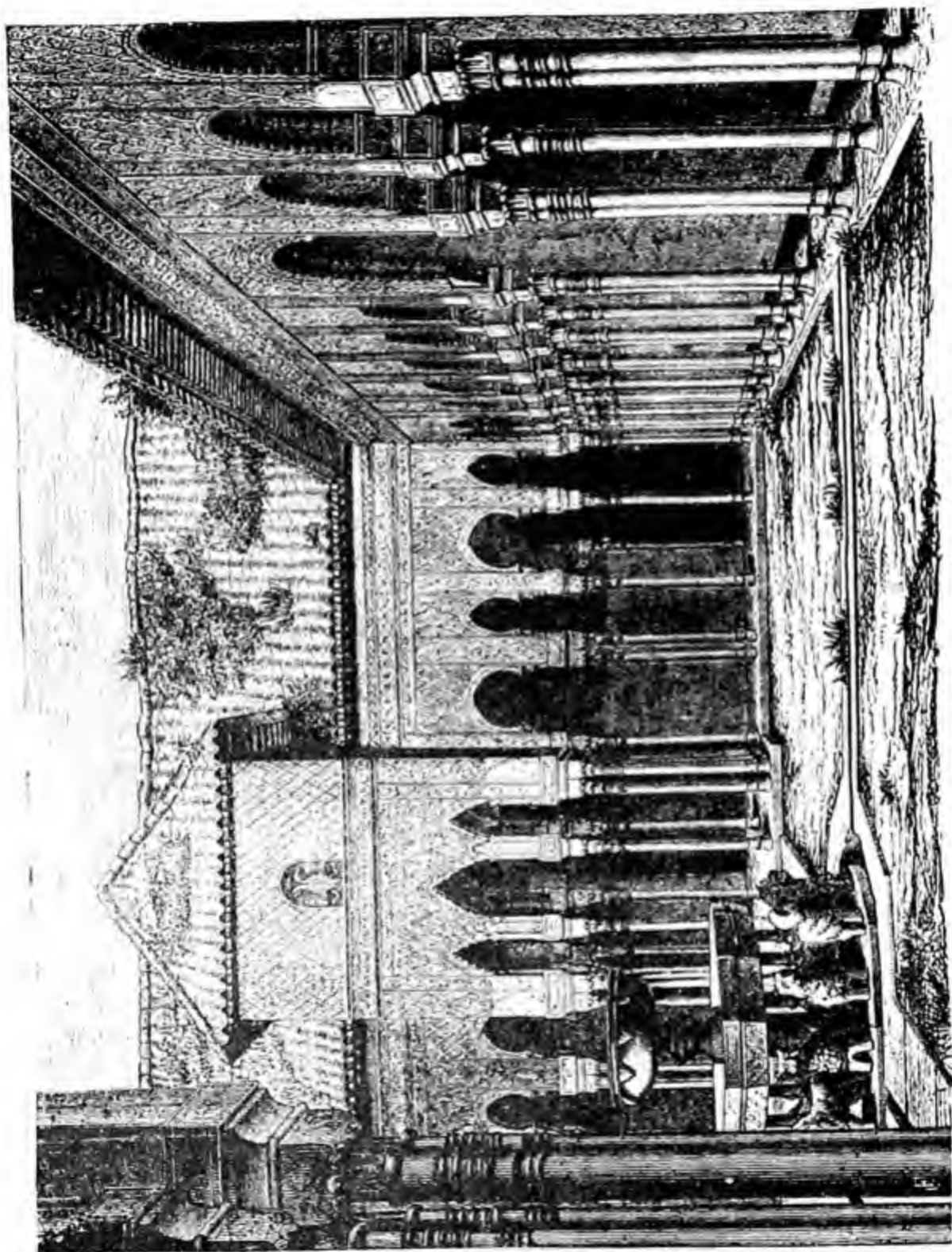


Ground-Plan of the Alhambra at Granada.

Charles V., yet the most beautiful parts of the interior are still preserved. They consist of splendid halls and dwelling-rooms grouped round two courts, the one, the Court of the Alhambra, with its double row of myrtles, and the other the celebrated Court of the Lions. (Fig. 295.) (For plan, see Fig. 294.)

This Court of the Lions, so-called from the fountain, which is placed in the centre, and supported by twelve of these animals, is a hall surrounded by graceful columns and arches, while in the middle of the narrow side of the court the projecting columns form pavilions, in which are other fountains. On the south side is the Hall of the

Fig. 295.



View of the Court of the Lions in the Alhambra at Granada.

Abencerages (*a*), so-called because the knights of the race of the Abencerages were murdered here, while on the north side is the Hall of the Two Sisters (*b*).

The most celebrated amongst the magnificent and graceful dwelling-chambers and banquet-halls are the following:—The

Fig. 296.



Column with Superstructure in the Alhambra at Granada.

Fig. 297.



Capital of a Column in the Alhambra at Granada.

Audience Hall, or Hall of the Ambassadors, with a banquet hall in front; the Hall of the Abencerages; the Hall of the Two Sisters, in which were the women's apartments, and which consisted of a large hall with two side-halls and a cabinet; and finally a long, narrow hall called the Hall of Judgment, which took in the east side of the Court of the Lions. The combination of all these graceful halls and courts, with fountains and arcades, and with delightful little gardens attached to them, and gleaming with rich and magnificent colouring, lends a romantic charm to the whole.

The whole of the interior is of a highly ornamental character, and displays in the design of the decorations a carpet-like treatment, rather than a monumental one, or one based on constructive elements.

Light slender columns carry a wall which is covered with various decorative patterns upon stilted arches, which are lightly relieved with filigree work. In spite, however, of the free choice which was allowed in the various forms of the details, the whole seems imbued with a spirit of harmony.

There is a very successful imitation of the Court of the Lions with the adjoining halls, two-thirds of the natural size, at the Crystal Palace, which is well calculated to convey the magic impression which this building must have raised in the days of its splendour, and which it even now creates, although devouring time has robbed it of much of its pristine magnificence.

Since the Alhambra is especially suitable to illustrate the character of the Later Arabian style in Spain, and because the Moorish system of ornamentation found in that building its most splendid and most complete expression, a general description of the details of the Alhambra will not be inappropriate.

§ 223. The architectural style is essentially the same in the different parts of the Alhambra. The columns are very slender and elegant, the height being twelve times the diameter (Fig. 296), and adorned in the interior of the building with various colours and devices. The capital (Fig. 297) is almost always in the shape of a cube with the lower corners rounded off and adorned with interlacing representations of plants, whilst it is separated from the shaft by a long neck with several fillets. The base also is separated from

Fig. 298.



Fig. 299



Embellishments of the lower side of Arches.

Fig. 300.



Border of the lower side of an Arch, resembling Stalactites.

the shaft by a torus, and consists of one simple cavetto only. A rectangular cube rests on the capital and supports a circular arch with a vertical prolongation of the circumference (stilted arch). The beams which it supports are always adorned with Arabic inscriptions, either along their entire breadth, or interspersed with other ornaments. The arch never terminates directly in the capital or cubical architrave, but finishes on the side of the superstructure. The inside of the arch is not smooth, but ornamented with artistic decorations in stucco, which depend in points and resemble embroidery, richly interlaced and filigreed (Figs. 298 and 299), whilst often they assume the less pleasing shape of stalactites (Fig. 300).

§ 224. The walls of the various chambers are uniformly ornamented after the same system, but with greater variety of pattern. The lower part for about three to four feet in height is inlaid with mosaic of a rich design, formed of glazed tiles, and ornamented with a narrow band, over which is a frieze with inscriptions, which also serve as embellishments, the letters being intertwined with the ornamentations (compare Fig. 289). Over this frieze there is a square surrounded by a border, which serves as the chief embellishment, and resembles a large carpet with patterns artistically interwoven; and immediately below the ceiling is a broad frieze, which frequently has half-columns as supports for the domes that form the roof. These domes have the stalactite form which has previously been alluded to (Sect. 218), consisting of small groups of niches with dependent points.

The richness of the various details is worked up to the highest magnificence by the tasteful variations of colouring, both in the domes and on the walls. The colours are so arranged, that the most softened are predominant in the lower parts, the deepest on the main surface of the walls, whilst the most brilliant are employed on the remote and elaborate portions of the ceiling. On ornamented surfaces the darker and more powerful colours were generally introduced in the receding portions, and in this way were toned down by the shading of the more prominent parts, which being gilt or painted in light colours were thereby brought into still more prominent relief.

The various colours were either separated from one another by

white bands, or this was effected by the shading produced by the relief. The harmony of the entire surface, when painted in various colours and covered with ornamentation in relief, was brought about in the most natural and effective way by means of gilding.

§ 225. By this arrangement of gradual transition from the simple to the artistic and magnificent, and by the proportion of the ornamented surfaces to each other, in spite of a lavish richness of ornamentation, a desirable harmony is attained, which causes the various parts to blend concordantly, and produces a general impression of repose. The designs of the enrichments contribute to this effect, for being on a small scale, and not concentrated or strongly marked, so as to claim the eye's exclusive attention, they do not detract from the general effect. The patterns in the various panellings have no connection with each other, and present the appearance of detached carpet-patterns, without exercising any influence on the architecture as a whole; and even if the eye be arrested and employed by one particular detail, it has no power to disturb the general survey.

The patterns of these embellishments are, it is true, often very similar, but they are never quite alike, invariably differing in some of their numerous combinations. The inscriptions are introduced sometimes in bold Kufic character, at others with the letters interlacing both in a horizontal and a vertical direction, that is from the bottom to the top of the wall, so that they can only be read conveniently by a person in a recumbent position.

§ 226. It is only in the ornamentation of these surfaces that any artistic taste is displayed in Arabian architecture in Spain: constructive forms are either non-existent or thrown into the background. The more new peculiarities of formation gain ground, the more do the architectonic and constructive elements vanish, and the latter remain in Arabian architecture generally, with its incomplete knowledge of technics, subordinate to the decorative principle. Attention was consequently more directed to the fantastic and elegant, than to the massive and magnificent.

3. ARABIAN ARCHITECTURE IN EGYPT AND SICILY.

§ 227. Egypt was subjected to the sway of the Arabs, and to Islam by the Caliph Omar. It formed at first a province of the Great Caliphate, and though it subsequently passed under the rule of independent rulers, it never again attained its former prosperity. The genius of the land remained as before serious and gloomy, and continued to exercise an influence on its artistic productions.

The most important buildings of the Arabs in Egypt which are known to us, and from which our opinion has to be formed of the style of architecture which they introduced into that country, which was modified by its genius, are to be found at Cairo or Musa, which was founded in the tenth century, and became one of the largest and most important cities of the East.

The earlier buildings, of which the oldest is the Mosque of Amrou at Old Cairo founded in 643, are very simple; the later ones are richer. The richest and most important mosque is that of Sultan Hassan (Melik-el-Hassan), which was constructed in the year 1356 A.D., *i.e.*, 758 of the Hegira. The design varies from the usual form, and the exterior is imposing.

§ 228. In the buildings of Arabian architecture in Egypt, a more solid construction and more powerful forms are perceptible than in the more graceful structures in Spain and Persia, but still a thorough execution and an organic perfection are wanting. Its simplicity has at times something magnificent, which borders, however, on vacuity, a fact which is principally owing to the deficiency in all definite constructive parts.

The style of Arabian buildings in Egypt and Sicily is principally to be distinguished from those which occur in Spain, India, and Persia by the frequent occurrence of the pointed arch, which first came into common use among the Egyptian Arabs. Sometimes it occurred in its simple shape, as in the West, in the so-called Gothic style, but it was generally depressed (see Fig. 282), frequently with a straight prolongation of the haunch. The keel-arch of Persia, and the horse-

shoe arch are not entirely excluded, but they are of rare occurrence.

Fig. 301.



Minaret at Cairo.

Still, however, in no building does one distinct form of arch occur to the total exclusion of others.

The arches rest either on pillars, or on plain or moulded piers adorned at the corners with half-columns. Although the arch construction is on the whole predominant, it was not used for the vaulting of large spaces, which were, on the other hand, provided with flat roofs: this was probably partly owing to deficiency in technical knowledge. When vaultings occur, they are generally secured by braces, beams and cement; whilst they are often entirely of wood.

§ 229. The mosques, at least the older ones, consist (see Section 213) of an open court, in which the side of the sanctuary is only distinguished from the rest by various rows of columns. In the middle of the court stands the quadrangular, or octagonal building, covered with a dome, which is intended for ablutions.

In the minarets (Fig. 301) the slender circular shape occurs, as it does in Persia and India, but also the square shape, with round or octagonal substructures.

The dwelling-houses are tasteless externally, according to Oriental custom, with small windows pierced high up in the walls, and with overhanging balconies in the upper storeys (Fig. 302), the windows of which, as well as those of the lower storeys, are secured by wooden lattice-work, which, with its variously intertwining patterns, forms the only, or, at any rate, principal charm of the exterior of the houses.

The interiors, on the other hand, display riches and luxury: a spacious court, paved with various kinds of marble or stone, in varied patterns, and provided with a fountain, is surrounded by open vestibules, beyond which are the doors that conduct to the various apartments, which also have latticed windows.

Ornamentation, as in the Arabian architecture in Spain, plays here too an important part, especially in the embellishment of surfaces. The same fantastic combinations and the same brilliant co-

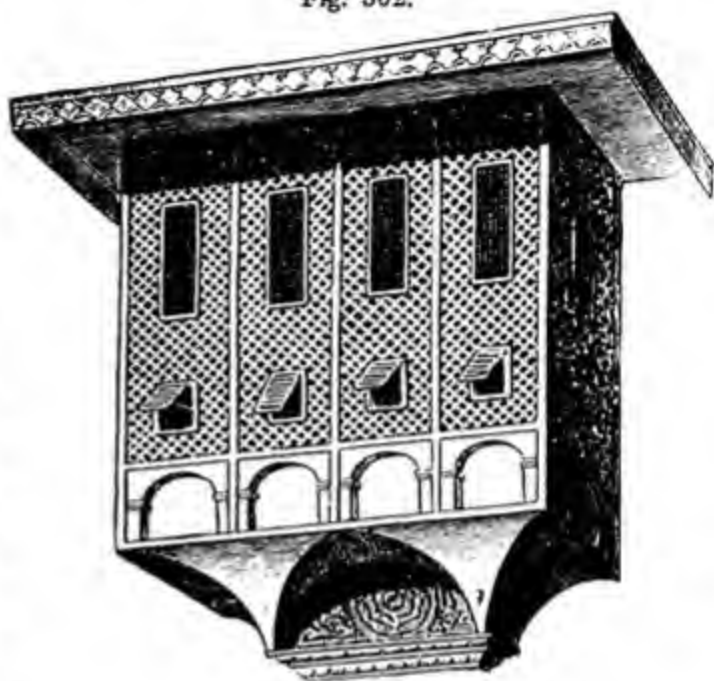
louring produce the same effect and exhibit the same shortcomings.

§ 230. In the course of the ninth century Sicily was also subjected to the sway of the Arabs. After the island had attained great prosperity in the tenth century under its new masters, it was again conquered by the Normans under Count Roger, 1090 A.D.

But the Arab element had now become engrafted in the population, and consequently the Norman chiefs favoured and advanced the Arabian arts and sciences which they found already existent, and caused buildings to be erected by Arab architects, which accounts for the fact that those structures which were reared during the Christian rule of the Normans still bear an Arabian impress, although Christian elements are mingled with them.

Nearly all the numerous castles and towns which were built in Sicily by the Saracens are destroyed. Two buildings, however, have been preserved at Palermo, in which the style of the Arabs is indubitably recognizable; the palaces of La Ziza and La Cuba (Fig. 303), which were erected before the period of Norman rule, probably

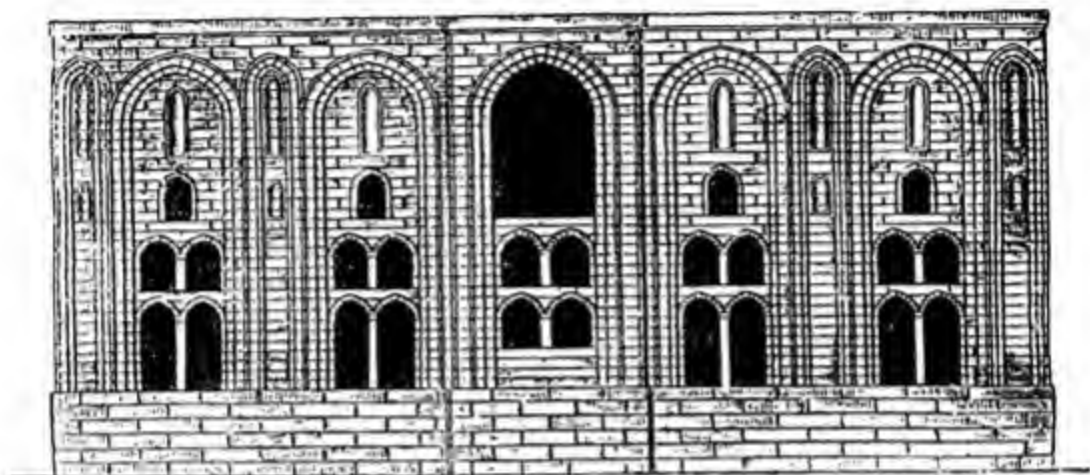
Fig. 302.



Balcony at Cairo.

in the tenth century. These buildings, which are less allied to Moorish constructions in Spain than to those at Cairo, have much in

Fig. 303.



La Cuba at Palermo.

common with the latter, as the solid workmanship of the material, the long divisions of the plain and lofty walls, and especially the pointed arch and the way it is introduced; and finally the favourite embellishment of the façade by the alternation of stone or glazed tiles of different colours, which were introduced in horizontal bands.

4. PERSO-ARABIAN ARCHITECTURE.

§ 231. In consequence of the battle of Kadesia, 636 A.D., the Persian rulers of the dynasty of the Sassanides were compelled to yield to the Arabs, who burst upon them with the impetuous fury which marked the followers of that creed which rapidly spread over the whole of Persia. But being a nomad race, and possessing few acquirements, and particularly no architecture of their own, the victors adopted the civilization of the conquered people, in the furtherance of which Greek Christians were also employed. Under the Abassides, in the course of the eighth and ninth centuries, the Arabian and the Old-Oriental elements were amalgamated into one whole. Bagdad was the splendid capital of this dynasty, where under Haroun-al-Raschid, who died in 809, arts and sciences were especially cultivated: still more was this the case under the rule of

Mahmoud Jemin-el-Dowlah, who died in 1029 at Ghazni, on the confines of India and Persia.

In the ninth century the artistic reputation of the Arabs was so considerable that the Byzantine Emperor Theophilus caused a summer-palace to be constructed after the design of the palace of the Caliph at Bagdad. Perso-Arabian architecture owes an especial impetus to the construction of fresh capitals, which was necessitated by the frequent change of dynasties. Owing to the Buides, whose seat was at Shiraz (932—1056), and still more owing to the dynasty at Ghazni, on the Indian border (977—1184), Old-Oriental, that is Old Persian and Indian elements exercised an ever-increasing influence, and during the rule of the Mongols (1220—1405), as well as under the Turkish races of the Sofides (from 1505), the same tendency was continued.

§ 232. The strict difference of style between these epochs, which are thus designated by their dynastic names, cannot be indicated, owing to our imperfect knowledge of the buildings in question. But still it may be gathered from the judgment of travellers, who could scarcely distinguish old from new, that no material alteration had supervened in the constructions of the Mahometan period.

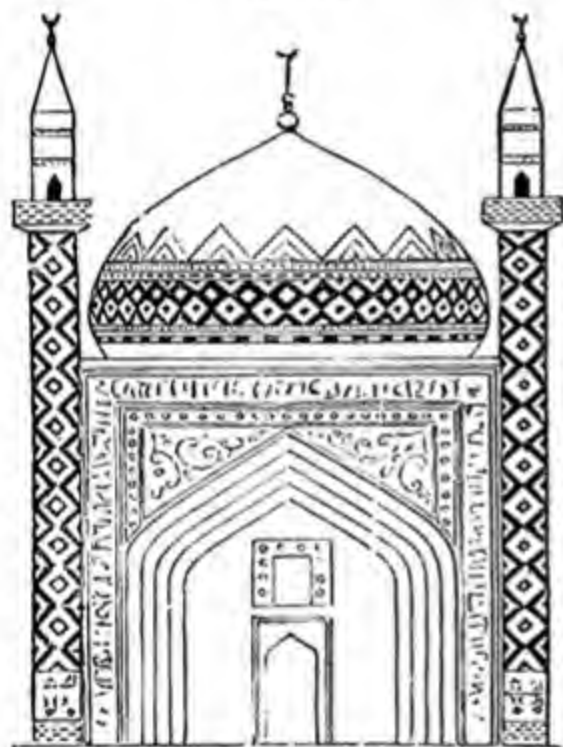
Our information, however, regarding the buildings of a later period is more accurate; as, amongst others, of those of Ispahan, which was founded by Shah Abbas the Great (A.D. 1585—1629), of the dynasty of the Sofides, or Sufis. He caused magnificent buildings, which were mostly of public utility, such as bazaars, caravanseries for travellers, consisting of quadrangular or octagonal courts surrounded by halls and buildings of various kinds, to be erected in his capital.

§ 233. The principal characteristic of the Perso-Arabian style is the arch. Although they are sometimes round or pointed, still they are generally broad with a swelling line and terminal point, not unlike the shape of the keel of a vessel, and therefore called the keel-arch (see Fig. 283). They are, however, devoid of constructive importance, as they do not serve to support anything, but on the other hand, require support themselves; they convey the impression of lightness and freedom, and generally rest on broad piers without columns. Pillars appear only to occur of wood, as supports for hori-

zontal roofs in the halls of the palaces. A further essential component part, at least in all the larger buildings, is the dome. Whilst sometimes of simple hemispherical shape, it frequently is slightly contracted at the base, and runs up into a point above (Fig. 304), it has the bulging form as in Russian architecture, but its shape is nobler and more lofty. The domes are adorned with variegated colours in different patterns.

Internally the vaultings have the stalactite shape, and are

Fig. 304.



Perso-Arabian Portal with Dome and Minarets.

sometimes formed of small flat niches. (Compare Figs 291 and 292.)

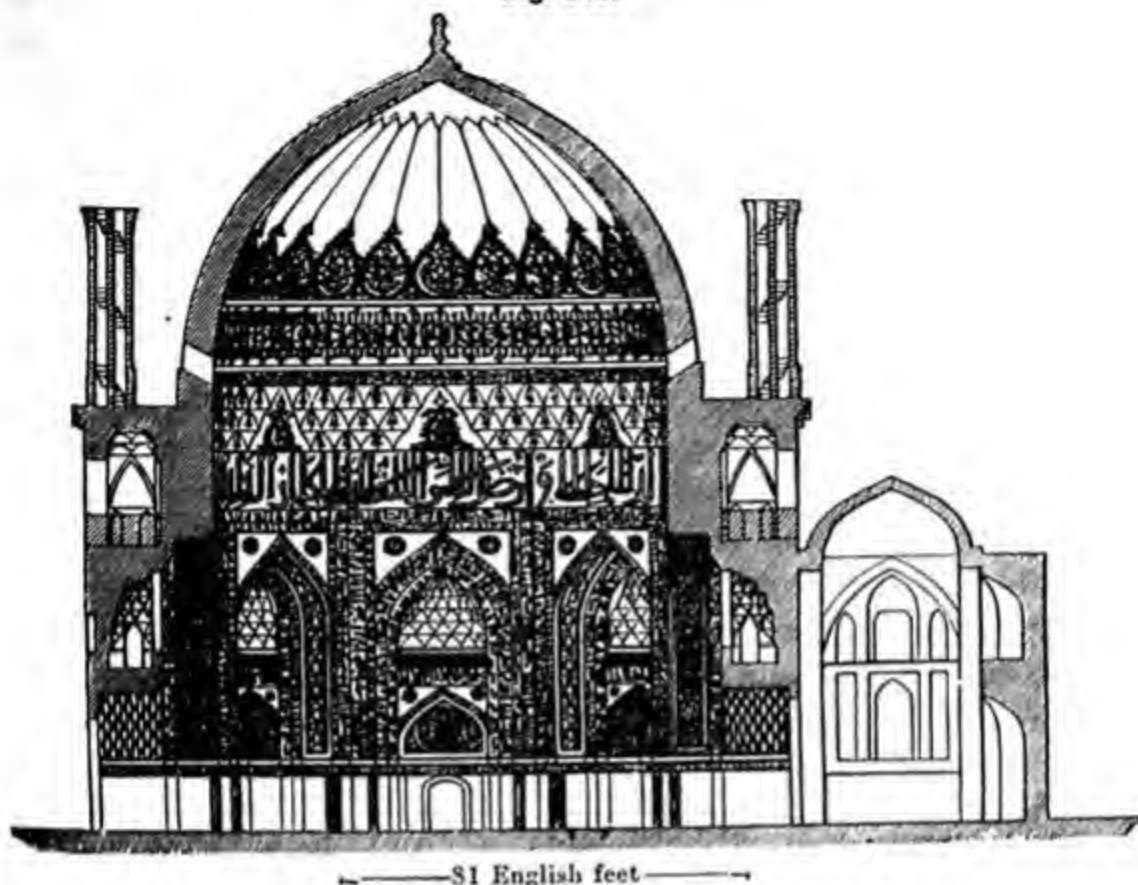
The mosques and palaces generally have portals, which consist of a large hall or recess, with a gleaming stalactite vaulting of azure and gold. The minarets are slender and decorated with glazed tiles (Fig. 304). Private buildings are lightly constructed of tiles, and the exteriors are painted in bright but not unpleasing colours, and adorned internally with mirrors and paintings, from which the human form is not excluded, for the Persians do not observe the prohibition of the Koran in this respect.

These paintings, however, have no artistic value, inasmuch as they are deficient in expression, shading and perspective.

The Perso-Arabian system of ornamentation is not so pure as the Moorish; an effort at immediate representation of nature, such as plants and flowers, is especially noticeable.

Fig. 305 gives the section of a tomb in the shape of a large octangular dome,

Fig. 305.



Section of the Tomb of Sultan Khodabendali (A.D. 1303—1316) at Sultanieh.

5. ARABIAN ARCHITECTURE IN INDIA.

§ 234. At the end of the twelfth century hordes, which were principally Turco-Tartar in their origin, poured irresistibly into Hindustan, and there founded a permanent Mahometan empire, of which the capital was Delhi. So quickly did this city increase in importance and population, that, at the end of the thirteenth century, it constituted the most brilliant court of the then world, and becoming the largest town in the East, and like a second Rome, was filled with public buildings, mosques, palaces, and mausoleums. This prosperity reached its highest pitch under the rule of the Togluks (A.D. 1321—1398, particularly under that of Feroze), but it collapsed with their downfall. For the Mongols, who under Timour drove out the Tartars, destroyed Delhi in such a way that only insignificant remains of its former magnificence are

remaining. A new conqueror, the Emperor Baber, founded in 1526 the dynasty of the great Moguls, whose residence was Agra, not far from Delhi. Agra soon threw the capital of the former dynasty into the shade, and was adorned with buildings of great splendour. Numerous specimens of their buildings are still in existence, both at Agra and at other places in India, as, for instance, in the neighbourhood of the river Jumna, which testify to the love of magnificence and the excellent technical skill of these Tartar races.

§ 235. As characteristic of the monuments erected during the Pathan dynasties, which flourished from the conclusion of the twelfth century till about the end of the fourteenth, it must in general be remarked that the ruins of Old Delhi exhibit an application and pureness of ornamentation in common with all other Mahometan styles, but at the same time they display to larger proportions and dimensions, and the forms are grand throughout. The domes which occur here, as in all Mahometan styles, are often simply spherical, surrounded at the lower margin with a circuit of battlements resembling foliage; the walls are generally divided by straight belts in a perpendicular and horizontal direction. The openings are sometimes spanned by simple pointed arches of the form prevalent in the West, and at others with keel arches; and in the case of small pavilions with straight entablatures resting on pillars or piers. Still more development and execution is evinced by the monuments of Pathan architecture which were erected at Beejapore in the Deccan. In the middle of the fifteenth century this place was the capital of an independent Mahometan kingdom, but was subjected to the Great Mogul during the latter half of the fifteenth century, and is now only a city of ruins, where, however, many splendid buildings are still standing.

§ 236. In these structures there usually rises over the centre of the building the dome, surrounded by battlements resting on a platform, and with a quadrangular substructure. This dome is generally bulbous in shape, bulging out beyond the line of its base, and terminating in a point above; whilst sometimes, but rarely, it is hemispherical. The main plan of the building is generally square, and less frequently octagonal. The walls are always divided by broad perpendicular pilasters which are connected by keel arches,

whilst above them massive rectangular entablatures project obliquely, which support galleries, over which battlements of the shape peculiar to this style of architecture, namely, oval shaped, pointed leaves, form the finish. Octagonal or round towers with small domes distinguish the corners of the building. The arches are always supported by strong square piers without capitals.

The mosques have, as generally in India, the shape of a square, the simple, massive walls of which are ornamented with towers at the corners (Fig. 306). The entrance consists of a large, projecting, tower-like structure, with a lofty gate with a keel arch. In the interior the court is surrounded on three sides by a simple arcade, whilst the fourth, on which is the sanctuary, is raised somewhat higher, and the doors not being shut, a view into the inner halls is obtained. The mosques are only moderately ornamented internally, whilst the palaces, on the other hand, which have several storeys, display every possible richness in embellishment.

§ 237. The gorgeous mausoleums are especially important, of which that of Mahomed Shah is massive and heavy, but still of striking simplicity, and possesses a dome the span of which exceeds that of St. Paul's, London; while that of his father, Ibrahim Adil Shah, who died in 1626, is lighter and more graceful.

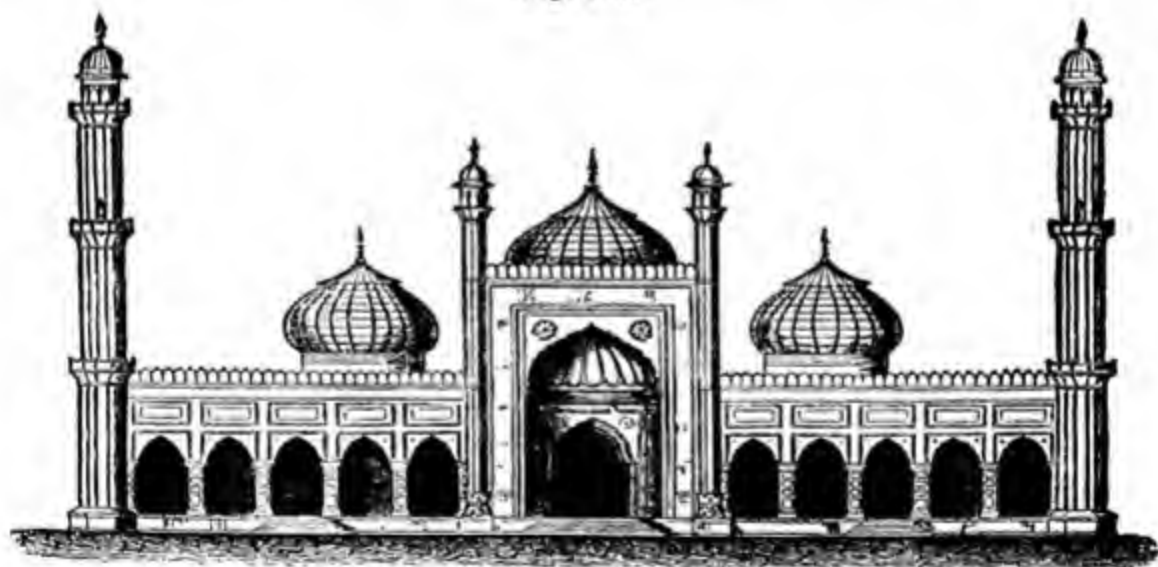
The tombs occupy the middle of a tank, which is surrounded by broad garden-walks, accessible to the public, and connected with mosques, from which the monumental portion stands out prominently. This building generally consists of a square or octagon, bounded by towers or minarets, with four large entrances spanned by arches, which lead to the central space, where the coffins stand under the dome on a raised platform, shut off by a balustrade, richly adorned with mosaics. This form, although the usual one, is not of universal application, for there occur, also, pyramidal designs something similar to the Dagoba, consisting of open halls with storeys. The richest and most charming of all these tombs is that of the Taje Mehal.

In general all these buildings exhibit a stately yet simple character, which is decidedly an improvement on the ordinary Mahometan styles. This is joined with a certain richness of details and with the full and luxuriant forms of the East, whilst here and

there the influence of early Indian architecture gave rise to curious details, which did not correspond with the otherwise noble forms of these structures, as, for instance, the barbarous ornament of chains of stone worked out of a single block. The style of the buildings at Beejapoor is similar to that of those at Agra, and the splendour of the whole of the designs corresponds: the walls of the interior are richly inlaid with mosaics formed of precious stones.

§ 238. The magnificent buildings with which Shah Jehan-Abad richly adorned New Delhi in the seventeenth century are essentially the same in style as those at Beejapoor, but their character is more elegant and less stately. The forms still are, however, praiseworthy, the main lines are well defined and uninterrupted, and the divisions symmetrical. The walls are higher and simpler, the entablatures are less projecting, and the bastion-like corner towers do not always occur. A very customary composition consists of a large gateway in the centre of the wall, with a broad keel arch, on both sides of which the walls, which are relieved by windows

Fig. 306.



The Jumna Mosque at Delhi.

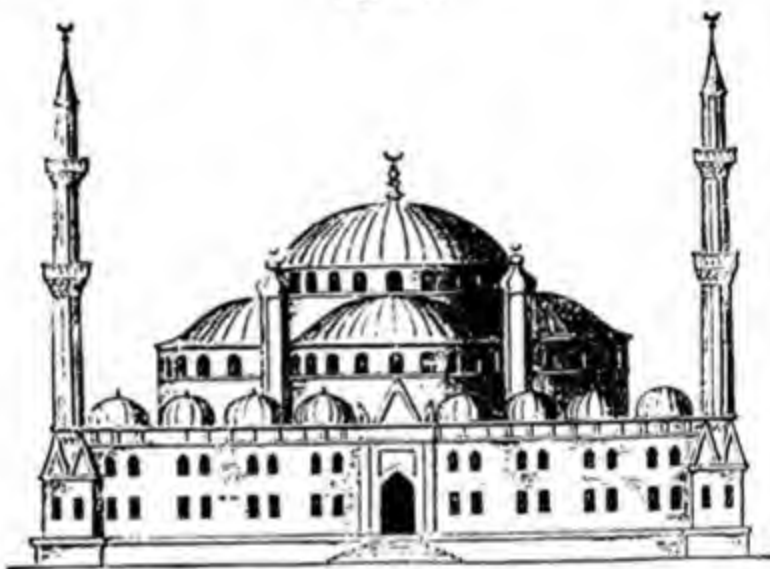
or arches, are divided by perpendicular belts and horizontal lines (Fig. 306).

G. TURKISH ARCHITECTURE.

§ 239. The last stage of Arabian architecture is that of the modern Turkish Empire.

After the conquest of the Grecian Empire by the Turks, that

Fig. 307.



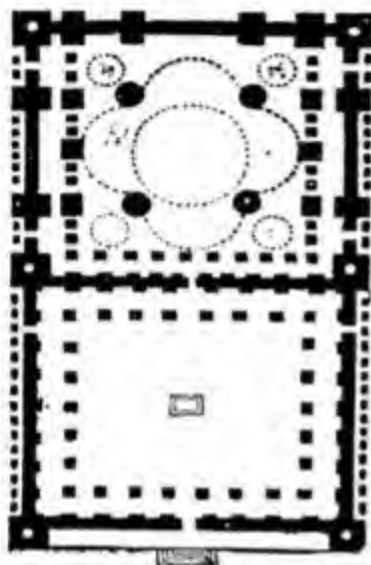
Facade of the Sultan Ahmed Mosque at Constantinople.

people made use of the buildings which they found ready at hand, as they had done in other instances previously, and they fell into the Byzantine style, with the admixture of oriental forms in the details.

When, after the fall of Constantinople in 1453, Mahomet II. began to adorn his new capital, he made use of Christian art and Christian architects. The Christian churches were dedicated to Islam, and under the guise of a mosque, the Church of Sta. Sophia soon came to be considered as very sacred. We consequently find that Arabian architecture, in its Turkish phase, did not undergo the same development as it did in the other countries where Mahometanism was the prevailing creed. Owing to this imitation, of existing Byzantine forms, of which the Church of Sta. Sophia was the highest model, and to the employment of the materials such as pillars, &c., which were available from the older Byzantine

buildings, a very great similarity exists between the mosque and the Christian church. The principal difference consists in the lively decoration of the interior, and the introduction of inscriptions instead of sculpture, which is common to all Mahometan buildings, and finally in the addition of slender minarets and the indispensable fore court.

Fig. 308.



Ground-Plan of Fig. 307.

The most splendid of all the mosques of Constantinople is that of the Sultan Ahmed (A.D. 1600) (Figs. 307 and 308); which, after Byzantine fashion, forms a large square, and supports in the centre a vast dome on massive fluted piers; from the central dome depend four semi-domes, whilst four still smaller domes are introduced at the corners. In the newest of the domes of importance, which was completed by the Sultan Osman at the end of the seventeenth century, one dome covers the entire building.

In the architecture of palaces the modern western construction has latterly been adopted at Constantinople and Alexandria.

§ 240. The essential particulars of the individual Arabian styles amongst the various Mahometan nations having now been considered, it remains to take a general survey of them when treated as a whole.

It must firstly be remarked that owing to the immense diffusion and difference of origin of the nations which embraced the creed of Mahomet, and owing to the heterogeneousness of the older native styles which prevailed at the time of its expansion, it was impossible that one uniform style should be developed in one and the same way, although it started from one and the same point. This accounts for the little similarity that exists between buildings in the Arabian style as they occur in India or in Spain, or amongst the Turks in the Byzantine empire. But in spite of the heterogeneous-

ness of the nations of Islam, a common stamp is visible in all ; and consequently their buildings, although they vary considerably from one another, display a common peculiarity, which distinguishes them clearly from those of other nations, and which is highly characteristic of the tendencies of Mahometanism.

§ 241. Speaking generally, a definite totality of design is wanting in Mahometan buildings ; for it is obvious at the first glance that the faulty forms of the exterior by no means correspond with those of the rich and elaborate interior, and that the essential constructive parts appear incomplete and meaningless. Unity of form yields to arbitrariness, as is shown by the manner in which piers and pillars, vaults and arches, of the most different kinds are jumbled together ; so that by the want of constructive skill in the treatment of these forms, both pillars and arches lose their intended effect, and appear unreal and feeble. Domes are readily introduced everywhere, but they are never in organic connection with their rectilineal substructures, but always seem to rest on them in a capricious manner.

It must further be remarked of Arabian architecture collectively, that the system of ornamentation is based principally on the decoration of flat surfaces. The plastic element could not be developed or even admitted, chiefly in consequence of the prohibition of sculptural representations by the Koran, and partly because all taste for this branch of art was wanting.

The application of the pointed arch is also characteristic of Arabian architecture, but it was not carried out constructively and harmoniously as in the Gothic styles of the West, but employed rather as a decorative detail.

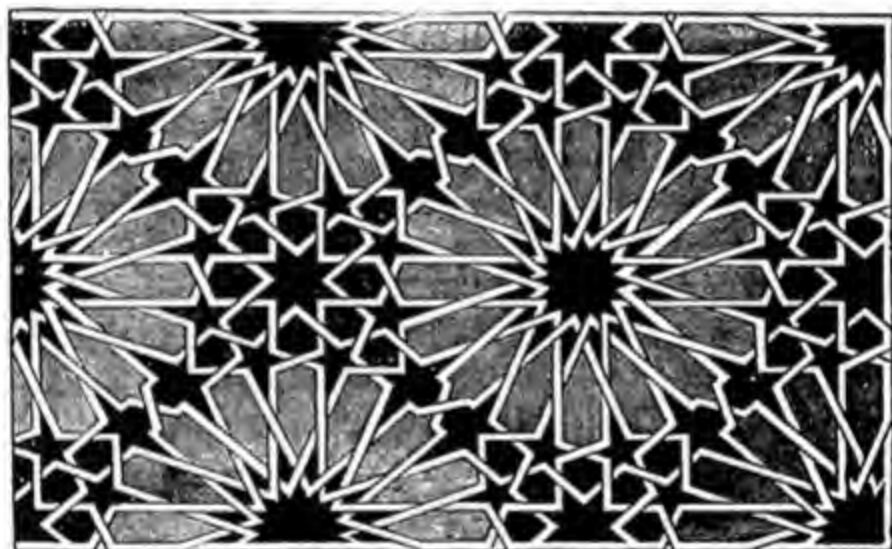
§ 242. From all these peculiarities viewed collectively, it appears that the main characteristics of Mahometan architecture are caprice and a striving after contrast. The latter tendency, however, is manifested in such a way, that, in spite of all its shortcomings, it asserts a certain pre-eminence, so that its deficiencies are not always apparent.

In details, however much they vary in the different Mahometan countries, the skill and quaintness of a versatile and bold imagination are always manifest.

§ 243. Still more characteristic and universally met with is the stalactite vaulting which has been described in section 218, as also the decoration of the walls with the Arabesques, which are peculiar to Arabian art, and have given their name to that species of ornament.

These arabesques display so much ingenuity and taste, and such variety and grace in their designs, that they attain perfection in their own branch, in spite of the exclusion of everything imitative. Although regularity is persistently avoided, yet certain rules are recognizable. Thus, for instance, the straight line, which is em-

Fig. 309.



Mural decoration at the Alhambra at Granada.

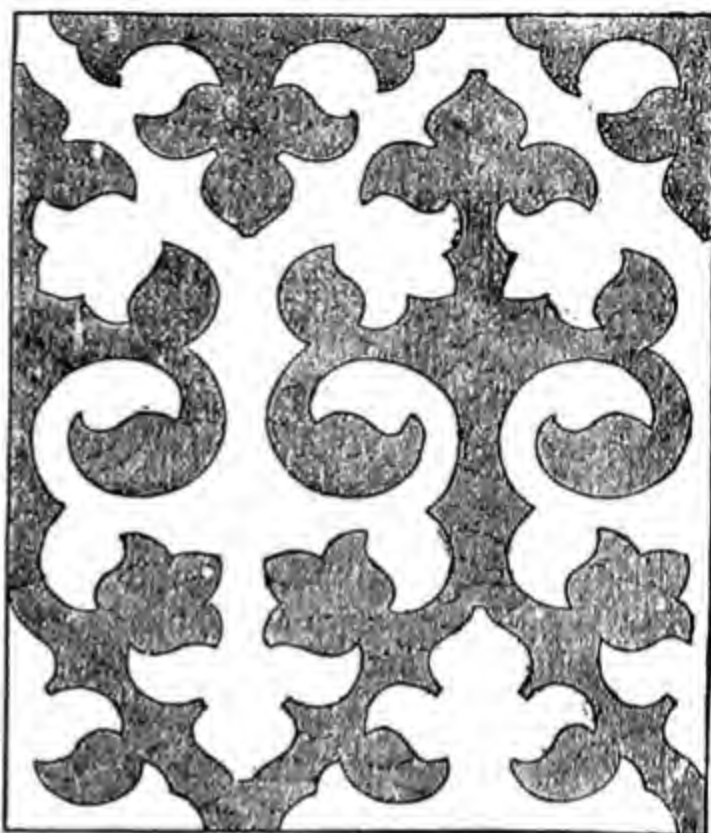
ployed in most of these ornamentations, never forms a right angle, at least not one that appears so, for when the design seems likely to produce one, the line is slightly prolonged, so as to bring about a complication of the pattern, or the right angle, if already begun, is broken off, and the line produced in another direction, so as to give rise to fresh intricacies. These lines have, moreover, generally an oblique bordering, so that they never form diagonals of the panelling. By the different disposition of the lines, besides many irregular designs, various polygonal forms, such as stars, &c., are produced, the lines of which are extended beyond the point of an intersection, as shown in Fig. 309. In arabesques in which circular lines are

predominant, the treatment is free, but they seldom form a circle or any other mathematical figure, but rather flowing curves, which have a rich and graceful effect.

A very simple and characteristic way of forming a marked contrast is by repeating the design in two colours in an inverse direction. (Fig. 310.)

§ 244. Colours are universally employed in these arabesques, as they are in Arabian art in general, with great taste, and with a due appreciation of moderation; not only the usual decorative colours, as red, blue, white, and gold, but also green, violet, brown, yellow, and even black. In the lower decorated portions, green, white, black, violet, blue, and dark yellow predominate; on the walls the ground is red, the borders sky-blue, and the letters gold, while the stalactite domes and the little niches are generally gilt, or brightly painted with red and blue enrichments on a white ground.

Fig. 310.



Arabesque, with repetition of the design in an inverse direction.

B.

THE CHRISTIAN ARCHITECTURE OF THE MIDDLE AGES.

IV.

LATER ROMANESQUE ARCHITECTURE IN GENERAL.

§ 245. The Early Christian Roman architecture, especially the Early Christian Basilica style, had, together with Byzantine architecture, been exclusively employed for buildings up till the tenth century, not only amongst those nations which were of Roman origin, but also amongst those Teutonic nations which had been diffused in all directions by the migrations of races. It was only subsequently to that period that a peculiar transformation of the art, which they had found already to hand, and which they had adapted in their constructions, began to be developed amongst the new nations and states that had arisen partly independently from Teutonic elements, and partly from an admixture with Roman.

Although this transformation took place in many different ways, according to the various degrees of civilization and the elements from which the nations were blended together, yet in its leading traits a uniform tendency is perceptible, which is based on Early Christian art, with its forms borrowed from the antique. At first there is visible a transformation of the old traditional forms rather than the formation of new ones, both in general design and in detail; whilst subsequently, especially when under the influence of the Cistercian monasteries which arose in France, many new developments became perceptible, not only in general architectural design, but also in details.

§ 246. Thus arose an independent style of architecture, which prevailed for some centuries in various countries, and which, in accordance with the different idioms of speech which contemporaneously were developed amongst the various nations of Western Europe, might be designed the Romance style of architecture, were it not for the fact that in English the word "Romance" is exclusively assigned to the sphere of philology, and would create confusion if applied to architecture. It has therefore been found expedient to employ the term *Later Romanesque* for that style which was prevalent between the Romanesque properly so called, in its various earlier phases, and the Pointed or Gothic style.

§ 247. This *Later Romanesque* style has various stages of development and perfection. During the early period, that is to say, the tenth and first part of the eleventh centuries, the rude outlines of vitiated ancient art are still entirely retained, but the new Teutonic element is perceptible in a semi-barbaric and more or less fantastic manner. In the course of the eleventh century the traces of this Roman style are still clearly perceptible, but with strongly marked peculiarities, whilst in the twelfth and thirteenth centuries the Roman style displays itself more freely, more richly, and more gracefully, in such a way that its forms seem to approach for a time to pure classic art. This classical tendency was, however, driven into the background, as well as Roman Architecture itself, by the growth of the Pointed or Gothic style in the course of the thirteenth century, in which the Teutonic element most essentially and most decisively asserted its prerogative.

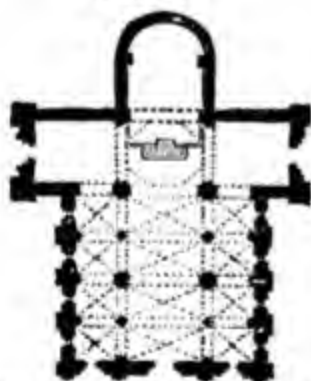
§ 248. If we investigate the elements of the *Later Romanesque* (Romance) style, we find that Roman Christian Basilica architecture is chiefly predominant, for while the disposition of the architectural whole, and of the main features of the churches which were built after the model of the basilicas have undergone a certain change, the details have been subjected to no altered treatment, and bear evidence of no new tendency. During this period, moreover, Byzantine architecture, as well as Mahometan, was not without its influence. In many particulars, and in the architectural design of the whole, many local traditions and nascent Teutonic elements are recognizable.

The elements of *Later Romanesque* architecture being, as we have

seen, nearly all borrowed, the style does not constitute one homogeneous whole, consistently formed and developed from one commencement in all its parts, but is to be considered rather, as a mixture, as a compilation, for which it is difficult to lay down any fixed and universal laws, particularly because this style embraces an extraordinary variety of forms which arise from local and individual contingencies, and from a greater or less degree of cultivation.

§ 249. The Early Christian basilica construction forms, however, as has already been remarked, the main basis of Later Romanesque architecture, for its essentially characteristic elements were applied during the whole duration of the Later Romanesque style, although here and there changes or modifications naturally supervened. One of the principal alterations that took place in the construction of churches was in the design of the choir, as transepts were almost universally added, beyond which the nave was prolonged considerably further than it had been in the old basilicas. The high altar was placed at the east side of the transept in front of the choir (Fig. 311), and owing to this construction the design of the church in the shape

Fig. 311.



Ground-Plan of the Church
of San Michele at Pavia.

of a cross became much more distinct and perceptible. The intersection of the transepts with the nave and choir generally had a superstructure in the shape of a tower. The transepts were of the same breadth as the nave, which was twice as broad as the aisles. A prolongation of the nave formed a detached sanctuary of considerable extent, which was raised above the level of the nave, and in it were arranged the seats for the choir. This elevation of surface sometimes extended to the transepts, as, for instance, is shown in Fig. 312, which is a representation of the Cathedral of Parma of the eleventh century. It will here be seen that the flight of steps extends quite across the building in front of the transept. Owing to this elevation, a crypt of considerable extent is formed beneath the roof of which consists of cross-vaultings * resting on pillars, even in cases

* The cross-vault must be considered as consisting of two barrel or cylindrical

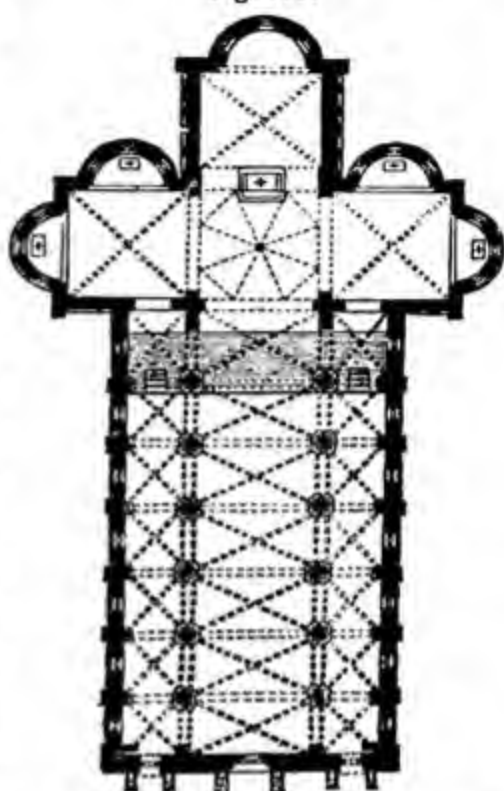
in which the nave still has a flat roof. These crypts were used for the preservation of the relics of saints, and as burial-places for bishops, abbots, and persons of princely rank.

Besides the simple design of the Later Romanesque choir, which has just been described, a passage is sometimes formed all round it, in continuation of the aisles, and having the same breadth, sometimes with chapels or shrines, and sometimes without. (Fig. 313). Another deviation from the usual form of basilica is, that in many churches the nave is produced at the west end as well as at the east, as, for instance, in the Cathedral of Worms (Fig. 314), which has a very imposing effect when viewing the western façade externally, and also on entering the building by a side door.

§ 250. Although the general disposition, even after the modifications just alluded to, remained that of the basilica, yet a characteristic innovation took place by the introduction of vaulting. In

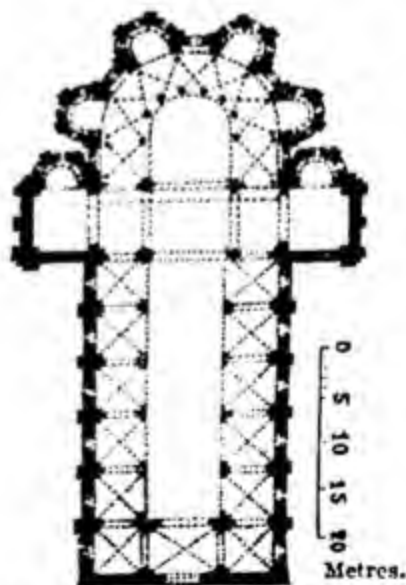
vaults of equal height (compare Figs. 199 and 200), which intersect one another in such a way as to form four arched triangles. It does not rest, as the simple barrel vault does, on the side walls, but springs in quadrangular bays from the corners. When several of these quadrangular bays ranged in succession have to be spanned over, the vaulting between them rests on columns or pillars, and is known by the name of rib-vaulting.

Fig. 312.



Ground-Plan of the Cathedral at Parma.

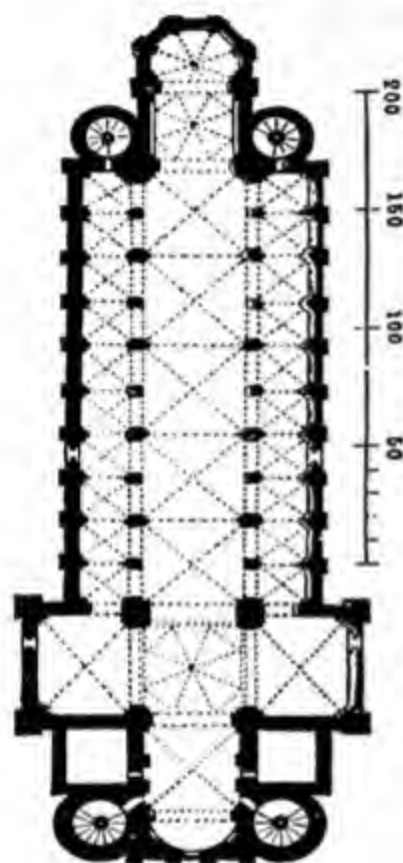
Fig. 313.



Ground-Plan of the Church of Notre Dame Du Port at Clermont.

the second half of the eleventh century what may be called the vaulted basilica arose instead of or in conjunction with the Early Christian basilica, which up till that period had retained the flat roof.

Fig. 314.



Ground-Plan of the Cathedral at Worms.

The system of vaulting, however, which then sprang into existence is essentially different, owing to the organic connection of the whole with its parts, from the arbitrarily combined dome-system of Byzantine architecture.

The arches that span the nave are not supported by pillars, but by moulded piers, which rise in conjunction with the walls of the nave. (Fig. 315.) The rib-vaultings, which these piers support, are sometimes moulded, but generally not so, and the spaces between them are spanned by cross-vaults, which terminate in a semi-dome over the high altar. The aisles are vaulted in a similar manner. At the intersection of the nave and transept a dome borrowed from Byzantine architecture is generally introduced, but it is polygonal and not circular in shape. As compared with the Early Christian basilicas, the interior of the churches conveys more the impression of an organically constructed and consecutive whole, which

effect principally arises from the nave being roofed by a complete system of vaulting, instead of by a wooden roof as heretofore. (Fig. 315.)

§ 251. The form of arch universally employed is the semicircular, which was often stilted above the semicircle by straight haunches. (Fig. 316.) In the countries in which Arabian influence made itself felt, as, for instance, in Sicily, the Arabian pointed-arch was employed (see Arabian architecture, Fig. 282), but without effecting any particular modification in the Later Romanesque style. Towards the close of the Later Romanesque style the foliated arch

Fig. 315.



Interior of the Church of San Michele at Pavia.

became of frequent occurrence, which was also borrowed from Mahometan architecture, but principally employed as an ornamentation. (Figs. 317 and 318.)

Fig. 317.



Foliated Arch.

Fig. 316.



Raised semicircular Arch.

Fig. 318.



Foliated Arch.

§ 252. In many details noteworthy modifications occur, especially in the columns, the intercolumniation being greater than in the basilicas, and nearly or exactly half the breadth of nave. The alterations in the different parts of the columns will be alluded to below.

Piers and columns were introduced in the same building, and that alternately, piers being employed at the corner points of the vaultings to mark off the main divisions, with columns between them, corresponding to the breadth of the aisles.

When a column stood in this way between two piers, a main arch, which embraced the arches that connected the columns with the piers, was thrown from pier to pier. This especially took place when there were galleries over the aisles, in order to separate them from the nave. A circular opening was often pierced over the central column, in which cusps were subsequently introduced (Fig. 319), and it was in this way that the trefoiled arch arose.

Fig. 319.



Separation of the Galleries
from the Nave.

Fig. 320.



Fig. 321.



Simplest forms of Piers.

§ 253. The piers exhibit a great variety in their construction. Originally they were smooth and quadrangular, or sometimes octagonal. (Figs. 320 and 321.) Subsequently the sharp corners were chamfered off, and small half-columns introduced, by which means the piers had a less rude and heavy appearance. (Fig. 322.) These half-columns are not, however, always merely indentations of the piers, but they

assume large proportions, and abut on the piers on their flat surface. (Fig. 323.) These half-columns were in their turn connected with the main body of the pier by rectangular projections of more slender proportions. (Fig. 324.) A still more beautiful arrangement is when a half-column of the same or larger size is introduced in lieu of the central of these rectangular projections. (Fig. 325.) In this way the whole pier, instead of a simple angular or circular form, assumes a moulded one; whilst the eye is already prepared for the moulding of the vault by its support; since the rib-vaults are repre-

sented in the salient half-columns, and the diagonal arches in the rectangular projections. (Compare Fig. 315.) Piers and vaults are consequently in reciprocal relation, for when the piers are moulded

Fig. 322.

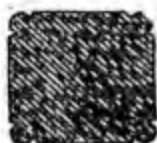


Fig. 323.



Fig. 324.



Fig. 325.



Plans of richer forms of Piers with Half-Columns. Moulded Piers.

the arches are moulded also. In the same way the half-column which forms the moulding of the pier appears not only as an embellishment, but also as a support to the corresponding bowtell of the arch.

Sometimes a still richer moulding occurs (Fig. 326), whilst at others only the sides which face the nave and aisle are moulded. In many cases, on the other hand, the connecting arches are supported by half-columns, whilst the other sides of the piers display flat surfaces: this generally is the case when the nave and aisles have no vaulted roofs. When, however, only the nave is not vaulted, the pier has three moulded sides, whilst that which faces the nave is plain.

Fig. 326.



Plan of richly-moulded Pier.

The half-columns of the piers, which support the rib-vaults of the aisles, being lower than those which face the nave, are consequently at the same time more slender. (Compare Fig. 315). In instances in which uniformity of height is maintained, the vault supports rise either from the capital of the central pillar, or from a corbel.

In England the whole pier has frequently the shape of a circular pillar of immense thickness, on the capital of which the vault supports rest.

The rib-arches of the vaultings, especially in the Early Period,

form either plain broad bands projecting rectangularly (Fig 327), or they receive a profile by the addition of fillets (Figs. 328, 329, 330.)

Fig. 327.



Fig. 328.

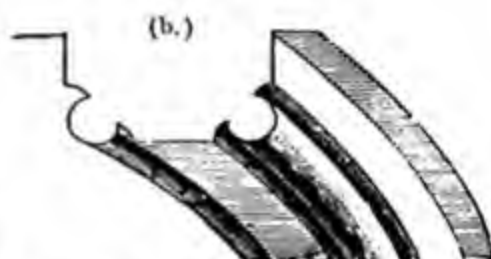


Rib-Arches of the Early Period.

Fig. 329.



Fig. 330.



Rib-Arches of the Late Period.

§ 254. The arches that occur in connection with external openings, especially in the case of portals, or entrance-doorways, are more fully developed. They exhibit externally, particularly in vaulted openings, the peculiarities of the Later Romanesque style. Their jambs are sloped off by rectangular recesses in such a way that an oblique line is formed by the corners. In the recesses occur shafts which are either round or only partly projecting, and their number increases with the richness of the portal. Over the capitals of the shafts is a continuous entablature, above which the profile of the jambs, with their alternation of nooks and shafts, is carried round the arch. (Fig. 331.) Similar mouldings occur also in windows and arcades.

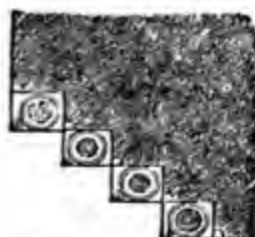
These doorways gave scope to the richest embellishment, they are consequently frequently adorned with sculptures, sometimes representing saints, at others, grotesque forms, which are introduced either in the tympanum in relief, or independently between the shafts. Symbolical, historical, and astronomical representations are also met

with. Thus the signs of the Zodiac and calendars often occur on the pilasters of the doors, the latter marking the months of the year by representing the proper employment for different trades in each month.

Lions are frequently introduced for the purpose of ornament, either independently over columns, or in groups on capitals and other parts of the buildings.

The principal entrance-door is not always, as was the case with basilicas and subsequently with Gothic churches, in the west façade, but generally on one of the long sides: this is especially the case when a choir occurs at each end of the building.

Fig. 331.

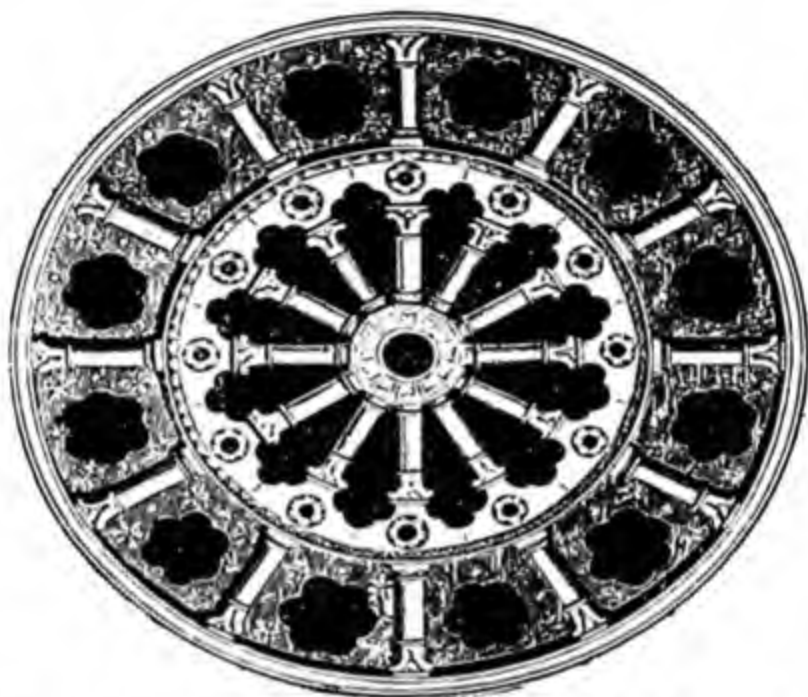


Doorway of the Monastery at Heilsbronn, near Nuremberg.

The so-called rose window is of frequent occurrence over the principal entrance-door, particularly in churches of the Later Period. It is a circular window in the form of a wheel (see Fig. 332).

The towers in the Later Romanesque churches, except in Italy,

Fig. 332.



Wheel-window (Rose) in the Church of Sta. Maria at Toscanella.

where they are more isolated, always seem to blend most harmoniously with the rest of the building. They are generally small and without a taper, of a square, octagonal or circular shape, and consist of several storeys of nearly equal height, in which, with the exception of the lowest, are arcades and groups of windows. The churches generally have two towers at the west end, but in those with two choirs there are two additional towers at the eastern termination of the building. Over the intersection of the nave and transept there is generally a hexagonal or octagonal tower in the shape of a dome (Fig. 233. See also Fig. 403). By this arrangement the whole exterior receives a picturesque impress, which is especially characteristic of these buildings of the Later Romanesque style, and forms a marked contrast to classical architecture.

Fig. 333.



View of the Abbey-Church at Laach.

§ 255. The ornamental details of the Later Romanesque style display at the commencement much similarity with those of old Roman architecture; but peculiarities soon arose, according to the various countries and positions in which they were employed.

In Later Romanesque ornamentation many types are borrowed from the vegetable kingdom, not in exact imitation, but with more severe geometrical stiffness. In connection with these forms, however, grotesquely shaped representations of men and animals often occur, especially in the capitals; but in the then low condition of sculpture, the productions are very frequently unsightly and fantastic (Fig. 334), and present a marked

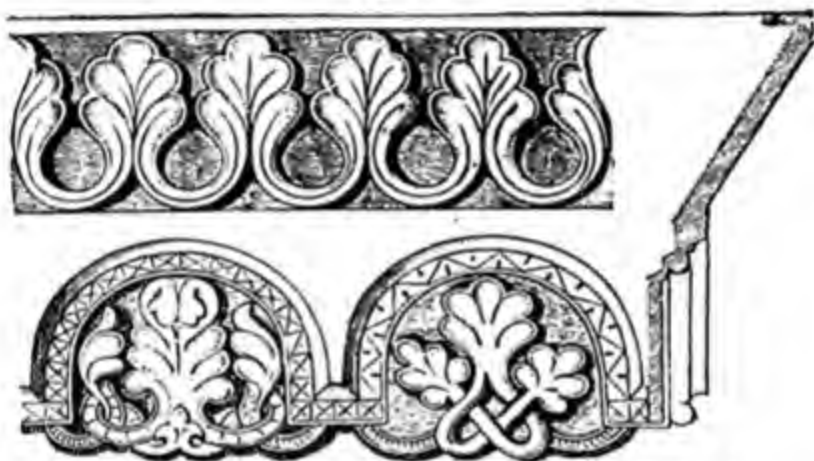
Fig. 334.



Capital with rough Grotesque Sculptures.

contrast to the ornamentations which represent geometrical patterns, or plants, which are executed in greatly superior taste. Still, in all instances where there is no immediate imitation of the antique, Later Romanesque ornamentation always displays peculiarly fantastic appearances, as representations of men and animals, masks, dragons and other fabulous beasts, mixed up in a wonderful way with interlacing foliage, that generally pointed to Byzantine prototype. By degrees this uncouth and grotesque treatment improved, and the decorations assumed more graceful shapes (Figs. 335, 336, 337).

Fig. 335.



Frieze Decoration in the Convent-Chapel of Murhard.

Fig. 336.



Decoration in the Church of San Ambrogio at Milan.

A taste for grotesqueness and variety is evinced by the heterogeneous nature of the forms of detail, for which no rule was laid down, as it was in classical architecture. To these details belongs first of all:

Fig. 337.



Decoration in the old Senate House at Saalfeld.

§ 256. The cubiform capital (Fig. 338), by means of which the harmonious transition from the cylindrical shape of the shaft to the

Fig. 339.



Capital in the Church of St. Sebald at Nuremberg.

Fig. 338.



Cubiform Capital.

Fig. 340.



Capital in the Cathedral at Spire.

flat surface of the arch was effected. This capital probably owes its origin to Byzantine art, and has the form of a cube with the lower corners rounded off, while the surface of the sides assumes a semi-circular shape, with the curve downwards. The most simple form of cubiform capitals, which is represented in Fig. 338, is susceptible of great embellishment. It forms, in fact, the basis of the richly shaped capitals peculiar to the Later Romanesque style by which the transition to the quadrangular upper portion is effected, as shown by Fig. 339.

During the last period of the Later Romanesque style, the capital often resumes its bell-like shape (Fig. 340), and is invariably adorned with graceful foliage, the stalks of which are covered with small ornaments in imitation of jewels, pearls, etc.

Fig. 341.



Capital in the Cathedral of Limburg on the Lahn.

Fig. 342.



Capital in the Cathedral at Bamberg.

The foliage assumes a more natural and graceful appearance than in the earlier specimens, and representations of men and animals are mingled with it. The richest capitals are those in which the bell shape and the cubiform shape are united (Figs. 341 and 342).

The greatest variety occurs in the forms of the capitals in the Later Romanesque style. Even the capitals of the same row of columns seldom are entirely similar; if the height be equal, the enrichment and the swell vary: but still a certain symmetry is preserved, inasmuch as similar forms are either repeated on the same side, or the column on the opposite side corresponds.

In cases where the antique element predominates, the capitals often call the Corinthian to mind, although no exact imitation was intended (Fig. 343). The chief point of distinction between them, apart from the difference in treatment, consists in the

abacus peculiar to Later Romanesque capitals: this is higher, but less projecting than in the capitals of the classical styles; its mouldings consist generally of alternate fillets and cavetti, like an inverted Attic base (Fig. 344), or they have vertical side-faces, which often receive embellishment.

In the case of piers, in which the mouldings are fully carried out, these capitals really become mere capital mouldings, inasmuch as they not only occur over the half-columns themselves, but are continued round the whole pier.

Fig. 344.



Profile of the Abacus of the Later Romanesque Capital.

Fig. 343.

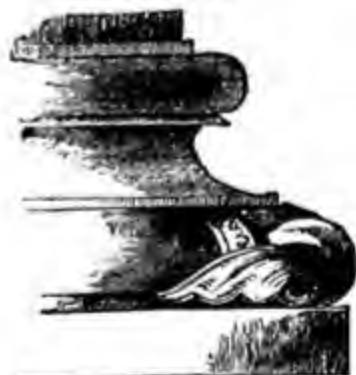


Capital resembling the Corinthian.

257. The base of the column is always the old Attic, or more properly speaking, a modification of the same. It rests on a quadrangular plinth, at the corners of which small embellishments, such as foliage or figures of animals, are introduced, which serve to relieve the abrupt change from the square of the plinth to the round shape of the torus (Fig. 345). In some instances the torus overlaps the plinth itself (see Fig. 366).

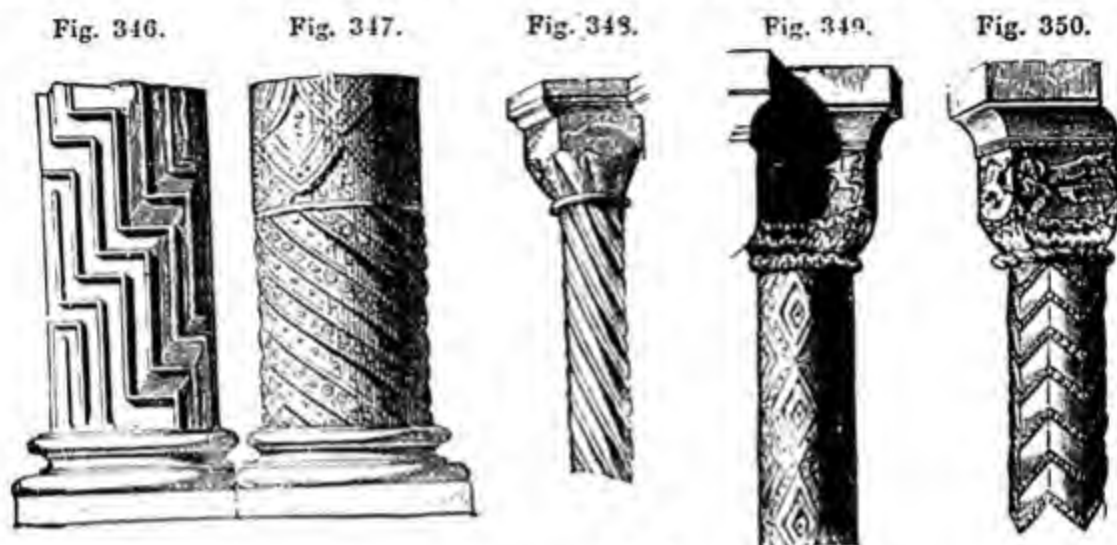
258. A great variety is displayed in the shafts, not only in their shape, but also as regards their surface. The proportional height remains nearly the same as in the Roman columns, but the diminution is greater and there is no entasis. Not unfrequently a broad fillet passes round the middle of several shafts when grouped together (see Fig. 331). These columns sometimes have spiral em-

Fig. 345.



Base of Column in the Cathedral at Magdeburg.

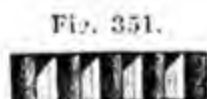
bellishments, or vertical flutings; whilst at others the ornamentation assumes a lozenge-shaped or trellis-like appearance, or is effected



Ornamented Shafts.

by zig-zag lines interspersed with projecting prisms, resembling the facets of precious stones. (Figs. 346 to 350.)

259. The horizontal mouldings still bear a classical impress; but, though they individually remain the same as in the Roman style, yet they differ more or less in their combinations, according to the country in which they occur: the mouldings of the cornice are, however, always less projecting than in the classical styles; and their profile frequently resembles that of an inverted Attic base (see Fig. 344), and corresponds in the abruptness of its contour with the base, which consists similarly of fillets and a cavetto. All the most varied combinations of Roman architecture are met with in these horizontal mouldings.



Elevation.



Tooth Ornament.

Fig. 352.



§ 260. The ornamentation of the mouldings is for the most part simple and rectilinear, and calculated to produce a regular alternation of light and shade; for instance, the tooth ornament (Fig. 351), which is constructed in such a way that the exterior projection is level with the surface of the wall. In horizontal mouldings the external portion of the ornament is not always angular, but is rounded off, and in some

instances, projects beyond the surface of the wall, and serves as a support for the upper mouldings (Fig. 352). Another orna-

Fig. 353.

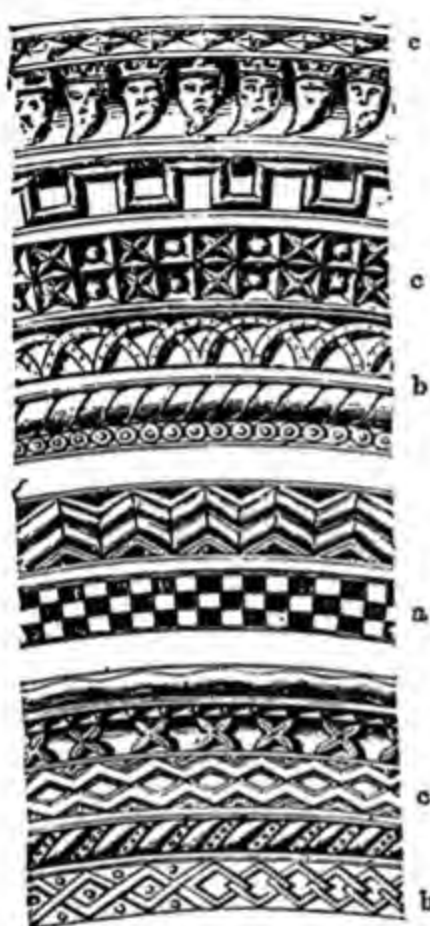


Fig. 359.



Fig. 354.



Fig. 355.



Fig. 356.



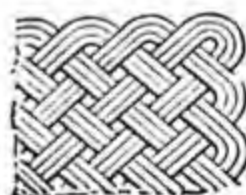
Fig. 357.



Fig. 358.



Fig. 360.



Various Later Romanesque Ornaments, occurring principally in connection with Mouldings and Archivolts.

ment resembles the squares of a chess-board (Fig. 353, a), and is introduced both in rectilineal and oblique surfaces. The billet moulding (Fig. 354) is of frequent occurrence. The scollop

and cable patterns (Figs. 355 and 353, *b*) are also met with, as well as the nail-head and lozenge (Figs. 353 *c*, and 356). Corbels are often met with in the mouldings, either simple or representing heads, masks, monsters, etc. Many other varieties of enrichments are found, some of which are depicted in Fig. 353; they occur principally in the archivolt of gate-ways and in windows and arcades. The most frequent in Norman Romanesque architecture is the zig-zag pattern resembling a saw (Figs. 357, 358, 359), while an imitation of trellis work is also of constant occurrence (Fig. 360).

In all these details less attention seems to have been paid to their relation to the entire structure than to the effect produced by alternations of light and shade and by multiplicity of lines, although a general idea of symmetry had its due weight in the main outlines of the mouldings.

261. Pilaster-strips constitute a peculiar charm of the exterior of buildings constructed in the Later Romanesque styles. They are slightly projecting, and are connected over each storey either by horizontal mouldings, or by a row of small semi-circular arches, forming a highly characteristic corbel-table (Figs. 361 and 362 : compare also Fig. 403). This latter is also frequently found alone.

Fig. 361.

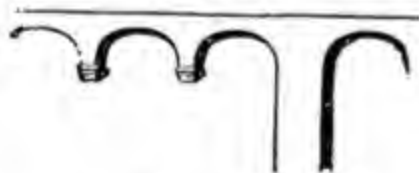


Fig. 362.

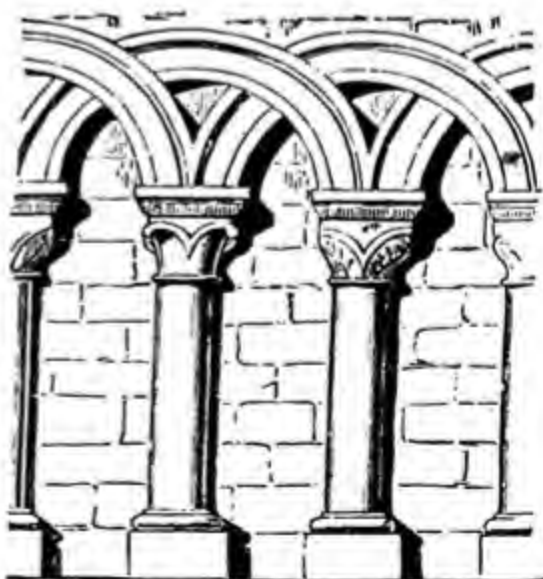


Fig. 363.



Corbel-Tables.

Fig. 364.

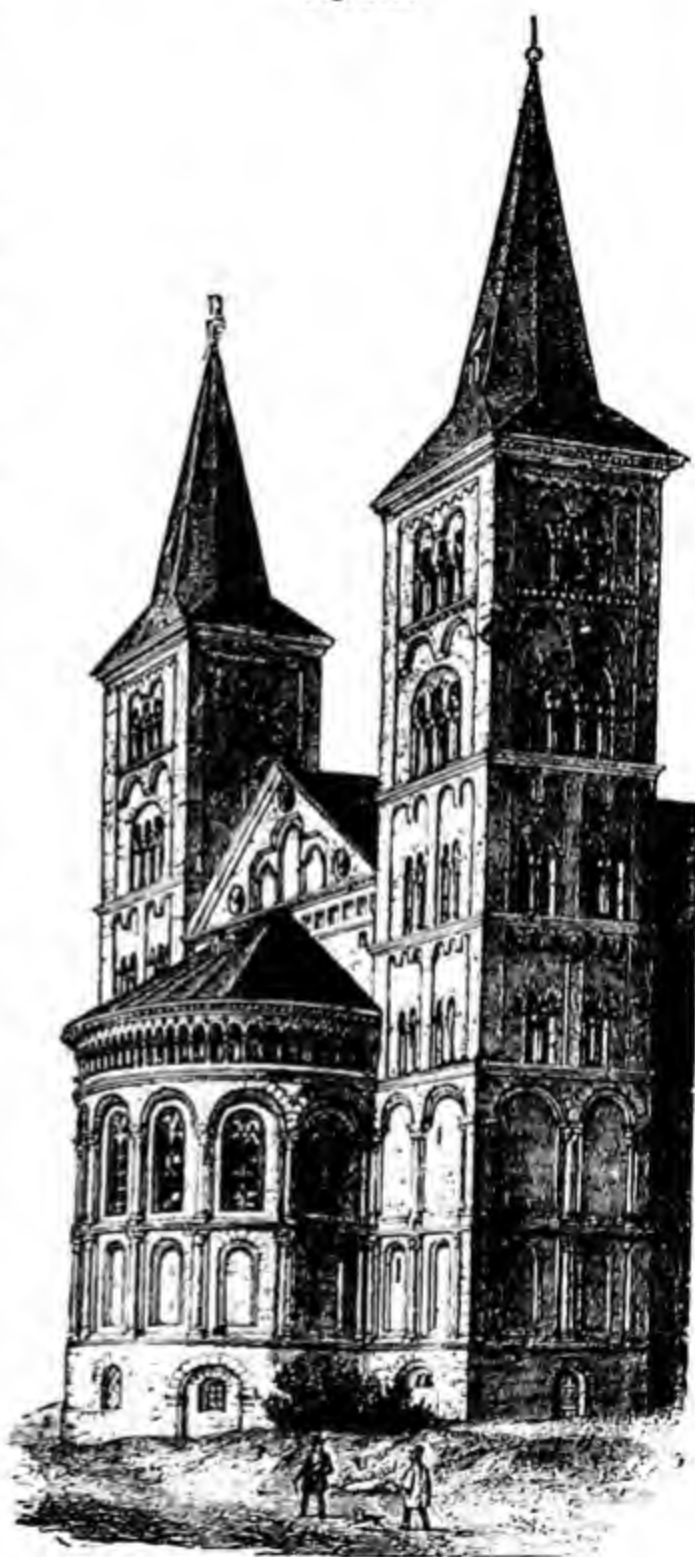


Interlacing blind Arcade.

without pilaster-strips, being carried out continuously on the wall : in which case the arches are either without support, or rest on brackets of the most varied shapes, frequently in the form of heads (Fig. 363). Instead of pilaster-strips half-columns, or pilasters with capitals, are occasionally introduced, each of which is connected by two semicircular arches, so that blind arcades are formed, and interlacing arches, as shown in Fig. 364. Arcades of this description occur generally in the case of façades and the sides of the choir, whilst corbel-tables and pilaster-strips are more usually met with on the side-walls.

Under the main mouldings in many churches in the Later Romanesque style, especially in those situated in Upper Italy and on the Rhine, small arcade-galleries (Fig.

Fig. 365.



Eastern portion of Bonn Cathedral.

365) are introduced instead of the corbel-tables. These galleries consist of detached shafts, which, being connected by arches, form an open passage. In most cases stronger piers or coupled columns are met with above the pilaster-strips of the lower storeys. These galleries are rarely continued all round the church, but are only introduced in those places which are intended to be the most richly ornamented, as, for instance, in the choir and the parts of the transept connected with it; or in the central dome or main façade.

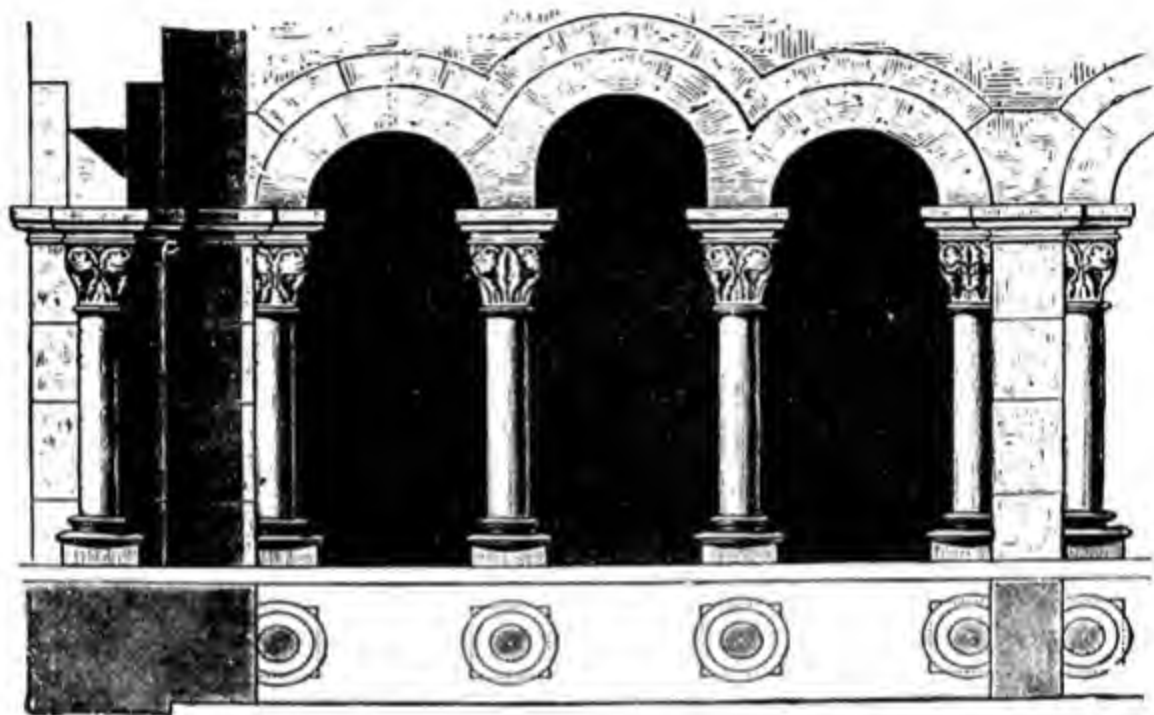
262. The details of the Later Romanesque style, and especially of the churches, having been mentioned in the fore-going paragraphs, it now remains to describe the general impression of the exterior. This may be designated as one of repose and satisfaction, although the windows are small in proportion to the size of the buildings. A solemn earnestness seems to pervade the structures, and the height and breadth of the interior are clearly designated by the picturesque grouping of the various blocks of the building.

263. In many churches in this style, particularly towards the end of the period, that is to say in the twelfth century, a new embellishment of the interior was introduced, the effect of which was very considerable. It consisted of coloured windows of painted glass, consisting of separate pieces of small size set in lead. Representations of figures in frameworks of various shape were introduced on a ground resembling mosaic with pearls or foliage as a border.

264. Up to this point the Later Romanesque style, as it occurs in churches, has been described; and the description holds good as characteristic of the style in general; for the individual forms of the various other buildings are for the most part borrowed from the churches. The round or polygonal churches, however, must be mentioned as forming a special class by themselves, which partly remained similar to the early Christian baptisteries, although undergoing the same modifications as the basilicas did, and partly may be classified as churches of the Holy Sepulchre, inasmuch as they were fashioned after the model of the old circular church at Jerusalem. These circular structures are generally surmounted by a dome, which, when the churches are large, is supported by a range of pillars.

The cloisters, moreover, which occur in connection with the churches and convents merit particular consideration (Fig. 366). They are covered passages, surrounding a quadrangular court.

Fig. 366.



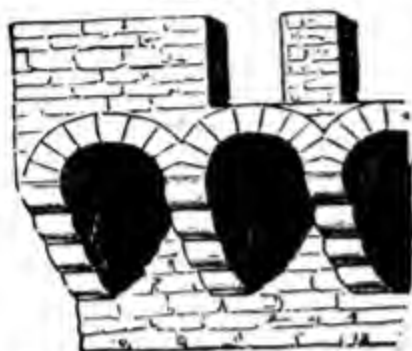
Part of the Cloisters in the Collegiate Church at Aschaffenburg.

During the early period they were situated, as in the early Christian basilicas, in front of the church, but they were subsequently attached to the south side. The open sides that face the court consist of graceful arcades, which are partly separated by piers and combined into groups. They generally produce a very pleasing and elegant effect.

265. Amongst civil buildings the designs of the castles of the knights are worthy of notice. These formed groups of several individual buildings of various height ranged alongside of one another, and surrounded by walls and moats. They were constructed round an inner court, and the knight's residence and the tower were the most important amongst them. The walls and towers were crowned with battlements, after the manner of the Romans, which were supported upon corbels connected by arches (Fig. 367). These battle-

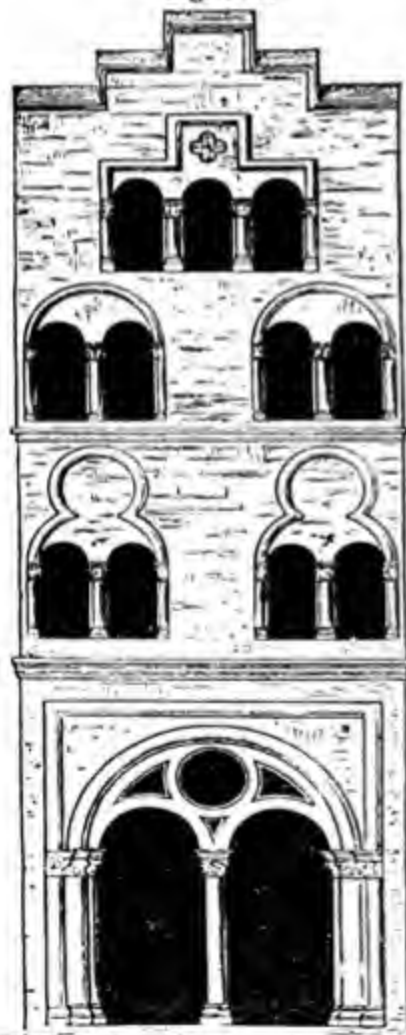
ments are of still more frequent occurrence in the succeeding

Fig. 367.



Upper part of the Town-walls of Avignon with Battlements.

Fig. 368.



Facade of a Later Romanesque House at Cologne.

Gothic style. Smaller castles had only a tower besides the buildings belonging to the establishment, and in this tower (or keep), which consisted of several storeys, were situated the dwelling-rooms of the lord of the castle. In the wall that formed the enclosure was an arched battlemented gateway; it was of simple architecture and closed by a drawbridge and portcullis.

The castles of the nobles were similar, but constructed on a larger scale. The main entrance was generally situated on

Fig. 369.



Capital in the Gate-way of the same.

the first storey of the above-mentioned towers, to which an external flight of steps gave access. On the entrance side of the upper storeys were open passages with arcades, the arches of which formed groups, and rested on small, single, or coupled columns.

The dwelling-houses of the citizens were very similar. The narrow side generally faced the street, and the façades usually had gables rising in steps. The windows were often divided into two lights by small columns, and surmounted

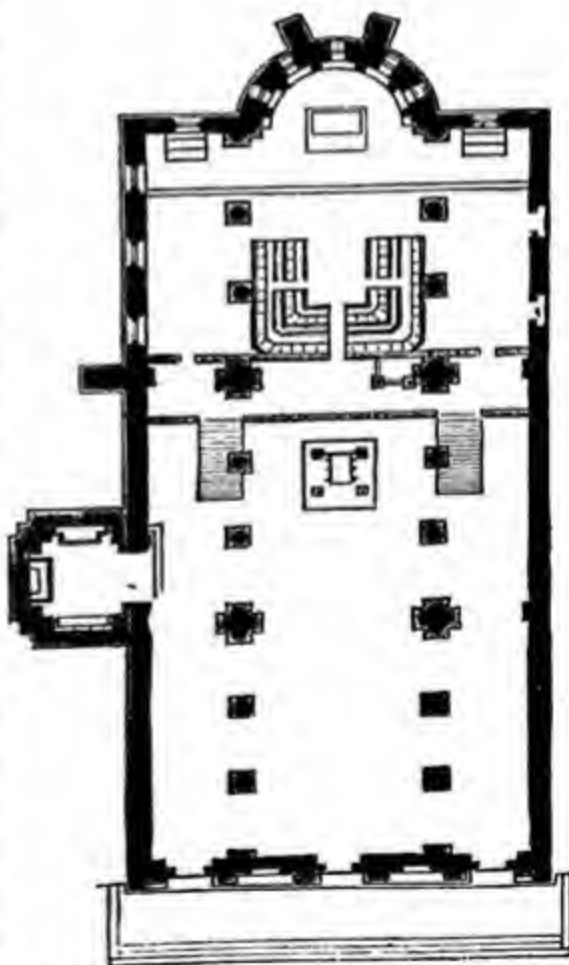
by an arch appertaining to both, of a shape almost peculiar to this class of houses (Figs. 368 and 369).

1. LATER ROMANESQUE STYLES OF ITALY.

a. LATER ROMANESQUE ARCHITECTURE IN CENTRAL ITALY.

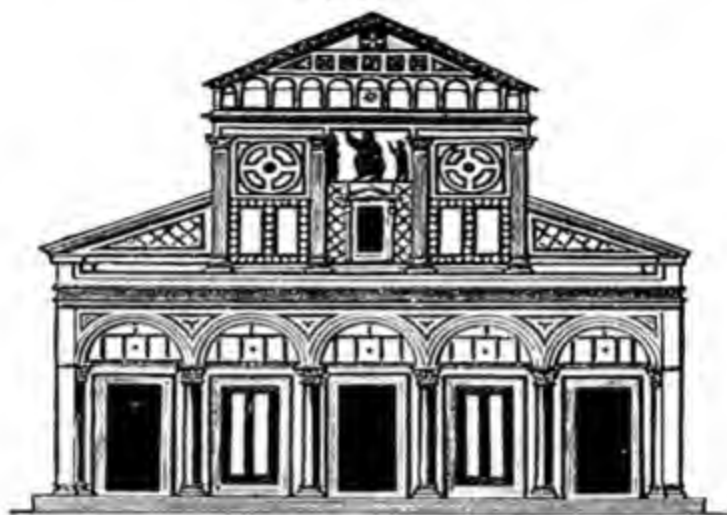
266. The traditions of early Christian art were preserved longer in Central Italy, and particularly at Rome, than they were in other countries, so that the form of the early Christian basilica was retained, even after the rise of the Later Romanesque style, as late as the beginning of the thirteenth century. The principal points of difference are, that the choir is raised above the level of the nave by a considerable flight of steps, and that during the early period of the style no transept occurs. This deficiency especially prevails in the more northern part of Italy, as, for instance, in the church of San Miniato at Florence (Fig. 370), and in that of San Zeno, at Verona, which both date from the eleventh century. The pillars of the nave are sometimes interrupted by piers from which rise arches that support the roof. In the details

Fig. 370.



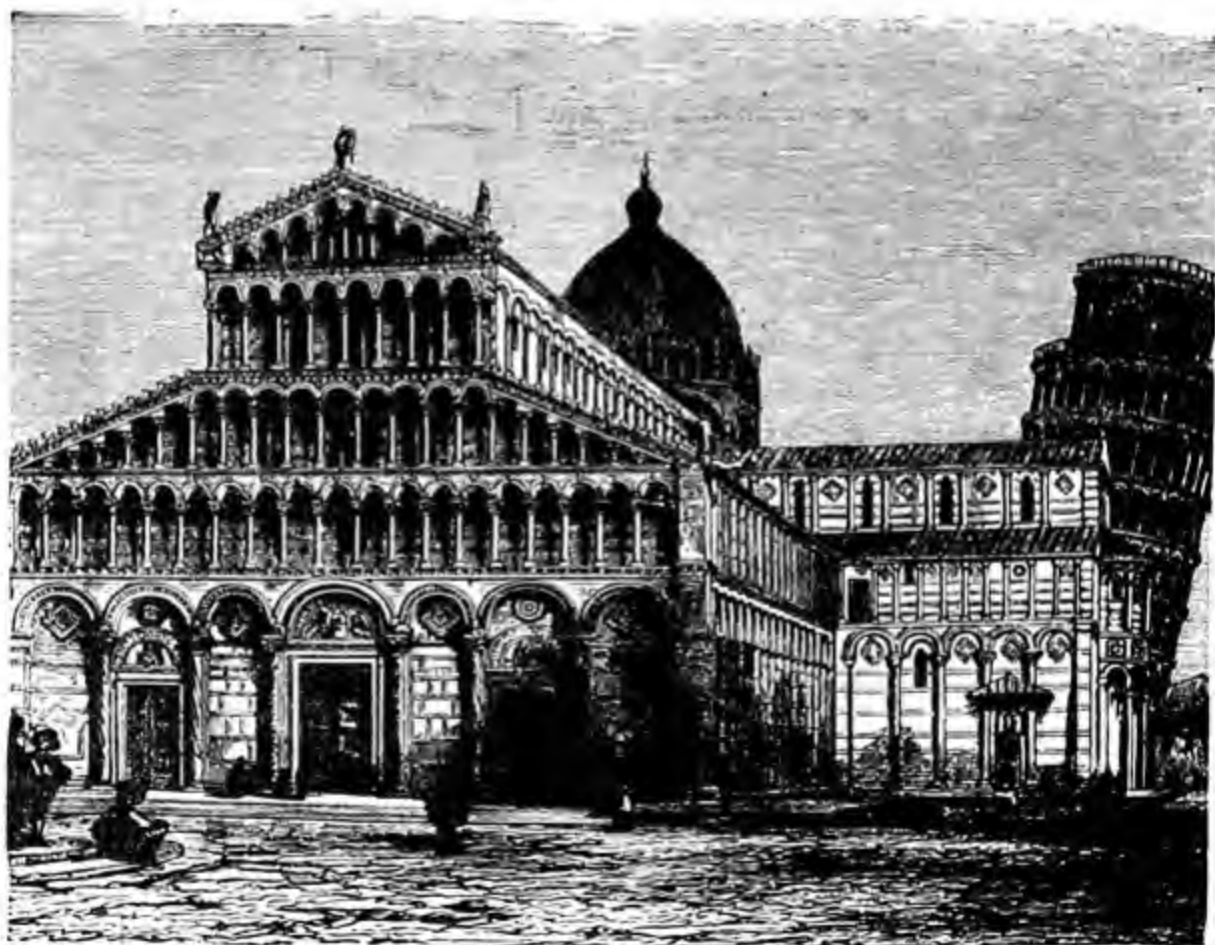
Ground-Plan of the Christian Basilica of San Miniato at Florence.

Fig. 371.



Façade of the Church of San Miniato at Florence.

Fig. 372.



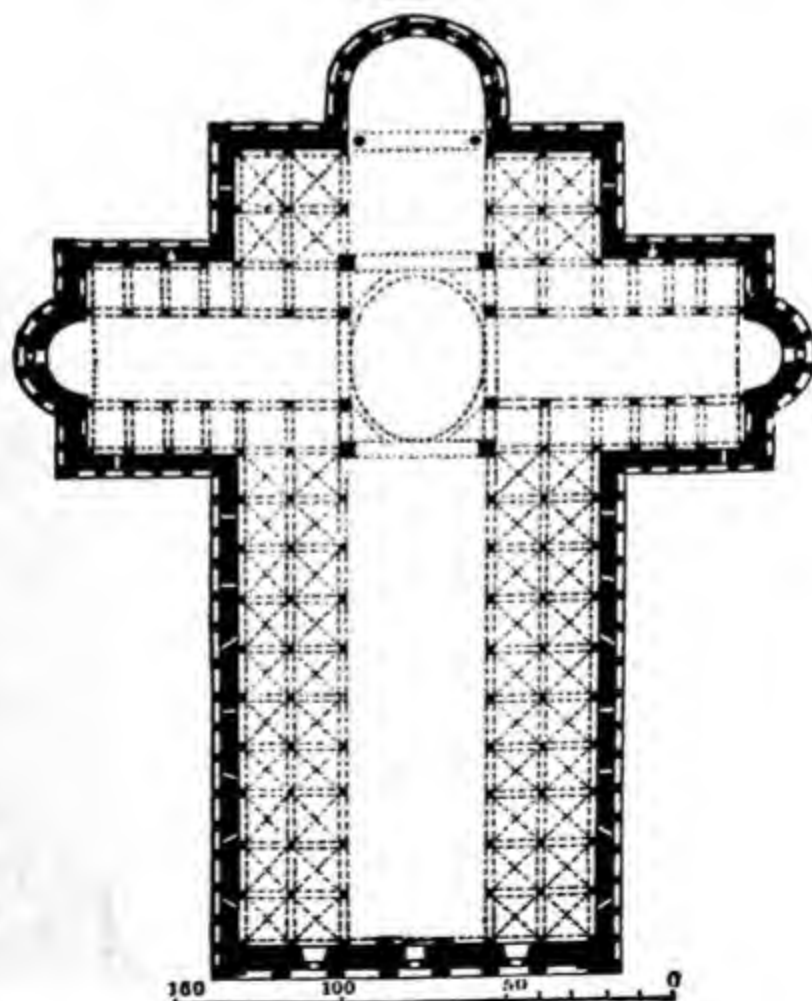
View of the Cathedral at Pisa.

the antique was more closely copied than elsewhere, and Roman forms were for the most part imitated.

The Later Romanesque buildings in Tuscany display, however, a peculiarity of style in their façades by an architecture of pilasters or half-columns with semi-circular arches, or an horizontal entablature. For the decorations, also, both of the exterior and of the interior, layers of white and dark marble, either black or dark green, are of very frequent occurrence ; the alternation does not, however, always take place regularly. A rich effect is, also, produced by the application of marble of various colours, as an inlaid facing to decorate the walls, and especially the façade (Fig. 371).

An almost unique variety of the Later Romanesque style in

Fig. 373.



Ground-Plan of Pisa Cathedral.

Tuscany is to be noticed in a group of buildings, the type of which is to be found in the Cathedral of Pisa, a building erected in the second half of the eleventh century ; and appears especially at Lucca,

Fig. 374.



Side of the Cloister of the Convent of San Paolo at Rome.

as well as in other places. Its marked peculiarity consists in a disposition of open pillar arcades, which, ranged in several rows one above the other, occupy the whole western façade up to the summit (Fig. 372). The eastern apse has also similar arcades, whilst on the northern and southern sides the horizontal mouldings and blind arcades run along the length of the building.

Fig. 375.



Cloisters of San Paolo at Rome.

The interior of this church must also be mentioned as magnificent and effective. It has a nave and four aisles (Fig. 373), and a transept with transept aisles and an apsidal termination, but of considerably smaller dimensions than the apse at the end of the choir. Over the intersection of the nave and transept is an oval dome, whilst there are galleries over the aisles. The external aisles are covered by cross-vaults, whilst the nave and galleries connected with it have a wooden roof. Owing to the many ranges of columns, the interior presents an unusually effective perspective. In these and other Later Romanesque buildings in Tuscany the corbel-table, which elsewhere prevails in this style in Upper Italy and other countries, is not met with.

§ 267. The designs of the convent-courts and cloisters of the thirteenth century belonging to this style also deserve mention. They were executed with greater richness and taste than elsewhere, notable instances of which are those of San Paolo fuori le mura and San Giovanni in Laterano at Rome (Figs. 374 and 375).

The utmost variety of shape occurs in the pillars employed in these buildings; sometimes they are twisted, and have capitals of the most varied forms, with fantastic sculptures, and a rich mosaic ornamentation on the entablature (Fig. 376), particularly on the frieze. This beautiful and elegant development of the style occurred towards the end of its existence, but the admixture of antique elements is still clearly perceptible, as, for instance, in the main outlines of the entablature and the principal supports.

§ 268. As a peculiar feature in the architecture of this style, especially at Rome, the tabernacle or canopy-work must finally be mentioned, which was introduced in the middle of the twelfth century over altars and monuments, consisting of columns with architraves over them, whilst instead of the frieze there was a small row of

Fig. 376.



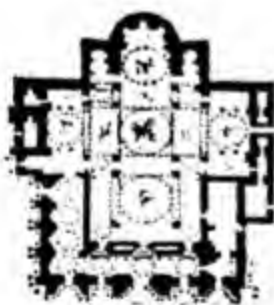
Detail of Moulding inlaid with Mosaic in the Cloisters of San Paolo.

shafts supporting the cornice, as is instanced in the churches of San Lorenzo and San Clemente at Rome. In harmony with this tabernacle-work were the ambones, which were richly decorated with mosaics. The most noteworthy specimens of the ambones are those attributed to artists of the family of the Cosmati. The mosaics introduced in these works, as also in the flooring, resemble those of early Christian art.

B. VENETIAN ROMANESQUE ARCHITECTURE.

§ 269. Whilst, as we have just seen, the Roman and Tuscan buildings in the Later Romanesque style imitate more or less the style of the Early Christian basilicas, and display but few Byzantine elements, Venetian Romanesque buildings, on the contrary, exhibit a decided reception of the Byzantine style, together with an affinity with Arabian architecture, although the style of the Early Christian

Fig. 377.



Greek Cross with five
Domes.

basilica was still retained as well. Amongst other buildings of this period the church of St. Mark at Venice was erected entirely on Byzantine principles (976—1071) (Figs. 377 and 378); in subsequent centuries, however, further mosaic embellishments were introduced, besides those originally designed by Greek artists. As is shown by Fig. 377, the plan is that of a Greek cross with five domes, in accordance with the Byzantine system, namely, one in the middle and one at the end of each arm. Galleries are introduced between the piers that support the domes, as in the case of the church of Sta. Sophia at Constantinople, and these form aisles, at the termination of which are apses, though not so large as that which forms the termination of the choir.

The whole interior is richly decorated in the manner peculiar to the Byzantine style, with mosaic flooring and pillars and walls of marble; the upper portion of the latter, however, as well as the whole

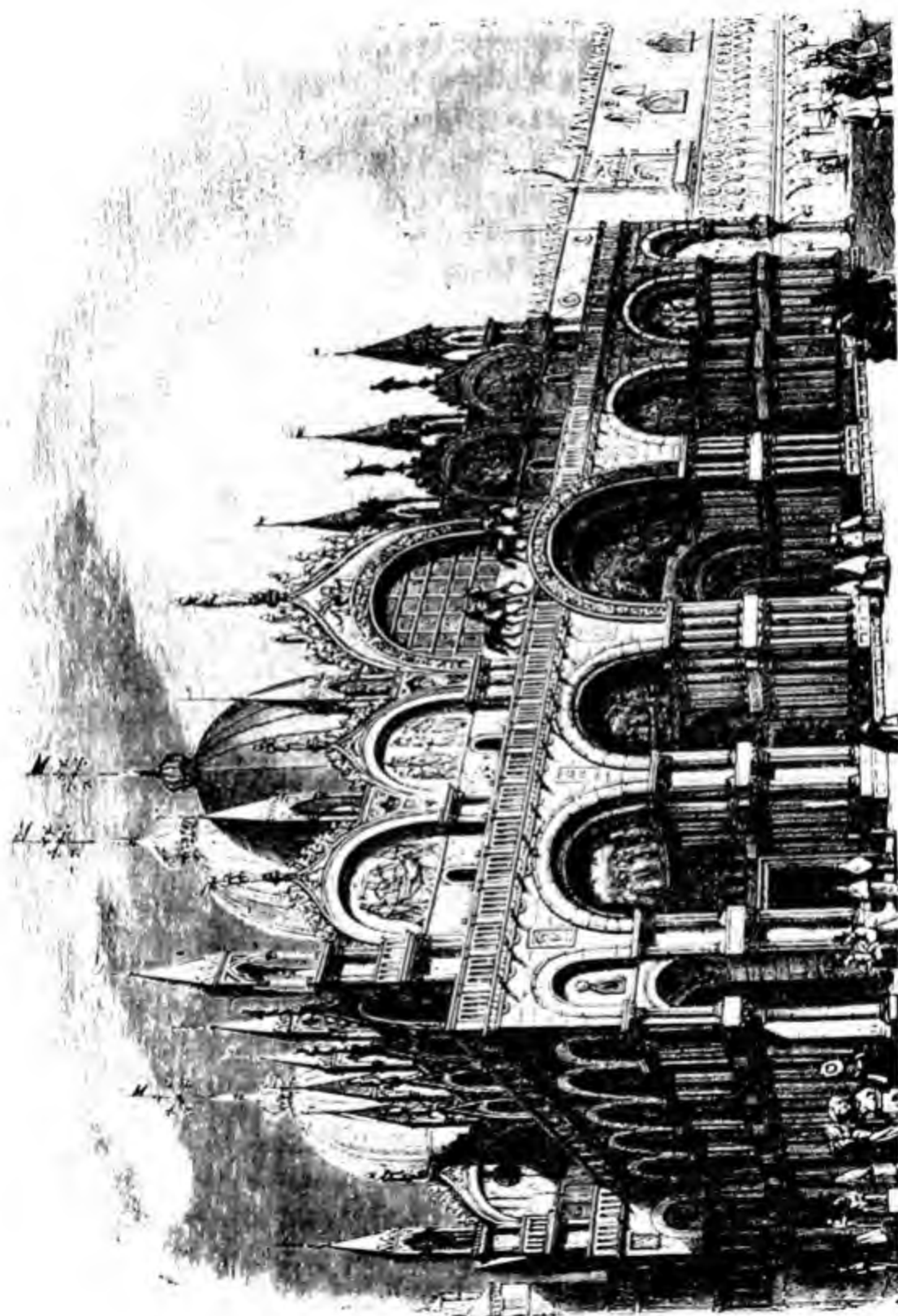


Fig. 373.—Church of St. Mark at Venice.

of the vaults, are ornamented with mosaics on a gold ground. The shafts and capitals, as well as the slabs of marble and other details, were for the most part brought from Greece itself, where they previously formed part of other buildings.

Other smaller churches, in accordance with the late Byzantine style, form a Greek cross, with a dome resting on four pillars in the centre.

Byzantine and Arabian elements are also recognizable in the architecture of the Venetian palaces. In consequence of the situation of Venice, these buildings assume a peculiar arrangement, which constantly occurs in all important Venetian structures of a later style, namely, that in the middle of the façades are introduced large open spaces with columns in several storeys one above another, corresponding with a main space in the interior of the building for the purpose of the ordinary intercourse of the household. The arches of the arcade thus formed consist for the most part of semicircles with straight haunches prolonged to a considerable extent, and rest on pillars of Byzantine shape, as, for instance, in the palace Fondaco dei Turchi.

C. LATER ROMANESQUE ARCHITECTURE IN LOMBARDY AND UPPER ITALY.

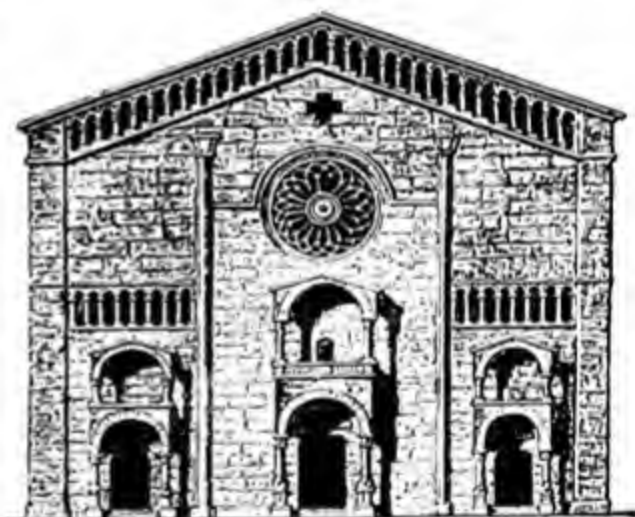
§ 270. The style of architecture that prevailed in Lombardy and part of Upper Italy, and which for a long time was recognized as a distinct Lombard style, presents essential points of difference from the other Later Romanesque styles which have as yet been mentioned.

The various specialities, however, which are noticeable in many of the parts, do not extend unexceptionally to the whole, and several of the peculiarities that are now to be mentioned occur in other churches of the Later Romanesque style.

In these Lombard churches the type of Early Christian architec-

ture was abandoned, and the new system of the vaulted basilica was introduced in its stead; although this system was subjected to several necessary modifications. (Compare Fig. 315.) Although what has already been said about the vaulted basilica holds good in general in the case of these churches with their cross-vault roofings, yet many peculiarities assert themselves in which the vaulted basilicas of Lombardy differ from those of other countries. This occurs particularly in the façades, which have not, as is usually the case, a higher central portion and low side divisions, but which present one mass, terminating in a gable above, under the slopes of which, as well as in the choir and dome, are introduced arcade galleries in the manner shown by Fig. 379. The separation into central and side divisions, as marking out the nave and aisles, is only effected in a way that harmonizes but indifferently with the whole by means of pilasters and half-columns. Besides the small arcade galleries below the gable, the whole of the façade is frequently decorated with one or more of these rows of arcades one above another, either continuous or grouped, with pilaster-strips between the groups. The west front is sometimes embellished with

Fig. 379.



Façade of Piacenza Cathedral.

a large and elegant rose window, which in fact forms one of the chief beauties of the façades of many of the churches in Italy, which are built in the Later Romanesque style.

The main doorway, and at times also the side entrances, have over the entrance a projecting porch with columns, supporting arches of the baldachino type, and resting on the backs of lions (Fig. 380), with occasionally a covered balcony over the whole of the portal, as in the case of Fig. 379.

The tower, as in the Christian Roman basilicas, stands isolated in proximity to the church.

The cathedrals of Modena, Ferrara, Cremona, Piacenza, Parma,

Fig. 380.



Porch of the Church of San Zeno
at Verona.

&c., all of which were constructed in the twelfth century, are instances of this kind of building; whilst various baptisteries, which generally have an octagonal shape, are in a similar way provided with several stories of arcades, both externally and internally. Some basilicas of Genoa, moreover, display rather the simple Lombard type in their façades, although their alternating layers of white marble and black basalt, as well as some other of their details, belong rather to the Later Romanesque style of Tuscany.

The details of the buildings of Upper Italy vary essentially from the more antique forms of Central Italy, the ornamentation bearing a more Gothic stamp, owing to the employment of grotesque animals and fantastic forms in general. The cube capital is also shaped, as it is north of the Alps, with perpendicular side-surfaces, and not like an inverted truncated pyramid, as it is in the Byzantine style.

D. NORMAN ROMANESQUE ARCHITECTURE IN SICILY AND LOWER ITALY.

§ 271. After their conquest of Sicily in A.D. 1061, the Normans introduced the Later Romanesque style of architecture into that island, as well as into Lower Italy. This style was, however, developed during its continuance in the eleventh and twelfth centuries in a manner that varied from that of the land of its birth, owing to the

influence of Arabian elements, which had become prevalent during the Mahometan occupation of the island, which had lasted for two centuries, influences still prevalent, though in a modified degree, under the sway of the Normans. Besides these Arabian elements, Early Christian Roman elements were also existent in the island, but Byzantine ones were still more extensively prevalent, which had been implanted and extensively employed before the epoch of the Arabian conquest at a time when Sicily still formed part of the Byzantine empire. In this way the Byzantine dome structure is blended with the design of the Roman Christian basilica in the manner which has already been mentioned, by the dome being introduced at the intersection of the nave and transept, or in the Byzantine method, resting on four piers in the centre of the building, which has the form of a Greek cross. The shape of the arches, both of those over the pillars of the nave and those above the doors and windows, is that of the Mahometan pointed arch, stilted by means of perpendicular haunches. The arches do not display, as they generally do in the Later Romanesque style, any organic connection with the pillars on which they rest, and, moreover, are not moulded, but, like those over the windows, appear mere rectangularly recessed openings in the walls.

§ 272. Sicilian Norman architecture is therefore not as in other western countries, real Later Romanesque, but is rather a mixture of Christian Roman, and especially Byzantine elements, with Norman Later Romanesque and Arabian: it must be, however, remarked concerning the latter that the features employed in the main architectural outlines, which were originally so arbitrary and fantastic, appear somewhat subdued into earnestness and repose; although the ornamentation retains all the splendour and brightness of the prototype. The embellishment of the exterior is particularly remarkable for the introduction of columns, half-columns, and pilasters; as also for the alternate employment of light and dark stone, and above all for the intersecting arches and the patterns of the mosaics. In the interior the ornamentation is effected by rich gilding, by shafts, and by coloured casings of precious kinds of marble, as well as by figure subjects and numerous other ornamental mosaics: the figures occurring in the Byzantine style, and the other patterns both in that style (Fig. 381) and in the Arabian; thus intertwining lines and stars are

frequently met with (Fig. 382). The roof either has the rafters exposed to sight, or has a stalactite shape in imitation of the Arabian

Fig. 381.



Mosaic-Ornament from the Capella Palatina at Palermo.

Fig. 382.



Mosaic-Ornament from the Cathedral at Monreale near Palermo.

cellular roofs, and is richly decorated in accordance with Arabian taste.

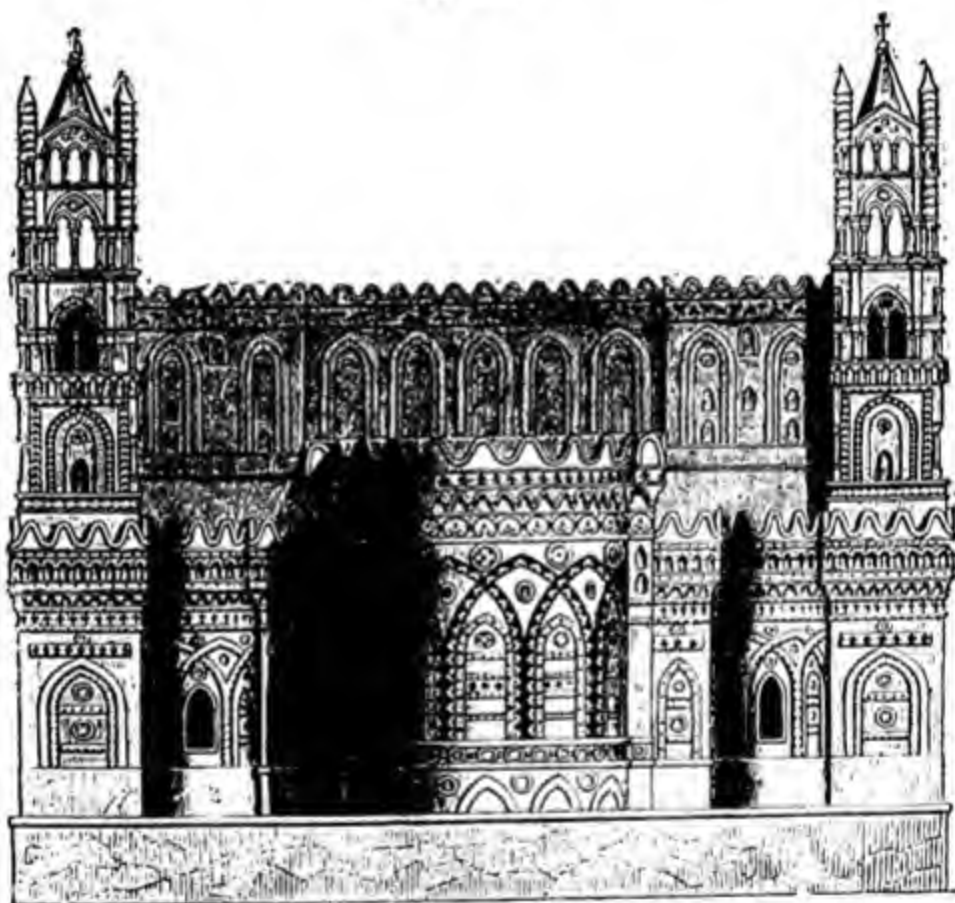
Like the Romanesque churches in Normandy, those in Sicily have two towers connected with the structure, though the method of their employment may be rather different. They rise from the ends of the western façade, with a portico between them, in the rear of which is the main entrance.

After the thirteenth century many peculiarities of the Later Romanesque styles of other countries made their way into the Later Romanesque Norman style of Sicily and Lower Italy; it still, how-

ever, retained its original features, and lasted till the end of the fourteenth century.

The most splendid examples of this style that we still possess are the cathedrals of Palermo (Fig. 383), and of Monreale, which is situated in its neighbourhood. The Capella Palatina, which is deserving of especial notice, was built at the beginning of the twelfth

Fig. 383.



Eastern Façade of the Cathedral at Palermo.

century, and is constructed almost entirely in the Byzantine and Arabian style.

Some convents besides, which resemble in general the Later Romanesque of the thirteenth century, show the admixture of the above-mentioned elements: as an instance may be mentioned that at Monreale.

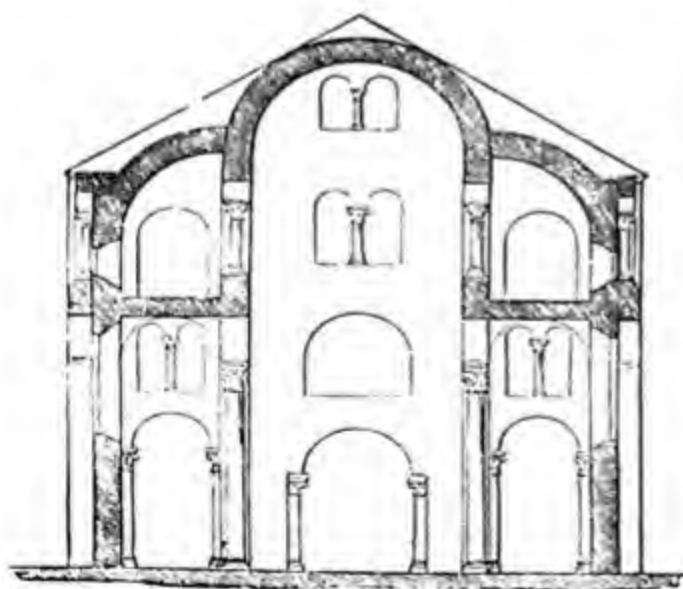
2. LATER ROMANESQUE ARCHITECTURE IN FRANCE.

§ 273. The Later Romanesque style in France exhibits, besides general peculiarities, various provincial ones, an investigation of which would be beyond the scope of the present work, which only aims at giving a short summary of the principal features of the different styles. It must therefore suffice to call attention to two of the branches of Later Romanesque architecture in France.

A. THE ROMANESQUE ARCHITECTURE OF SOUTHERN FRANCE.

§ 274. The influence and the imitation of Late Roman architecture is shown both in the ornamentation and in the mouldings, as well as by the introduction of the latter, without a constructive purpose ; and finally by the arrangement of the ground-plan in accordance with that of the Christian Roman basilica, although various modifications took place from time to time. But the point in which

Fig. 384.



Cross Section of the Church of Notre-Dame du Port at Clermont.

the influence of Roman architecture was especially displayed was the introduction of the barrel vault. Under this head, notice must be directed to the peculiar circumstance that the aisles are also roofed with a barrel vault, which adjoins the central vault, and acts as a support to it (Fig. 384). The barrel vaults of the nave, which, with few exceptions, rest on piers, are often separated by transverse arches,

which are themselves supported by half-columns or piers. The cube-shaped capitals peculiar to the Later Romanesque style do not occur,

but imitations of Roman Corinthian capitals, or capitals with figures instead of foliage as embellishment, are generally met with.

The small galleries of the exterior are also wanting; whilst arcades are seldom found; the usual construction employed being for the cornices to rest on corbels.

Although the constructive design appears deficient, still the rich embellishment of the façades, and especially the entrance doorways, in which there is an admixture of Romanesque forms of the Middle Ages, produces a satisfactory effect, inasmuch as the various architectural details are ornamented with a mass of fantastic sculptures.

B. NORMAN ROMANESQUE ARCHITECTURE IN FRANCE.

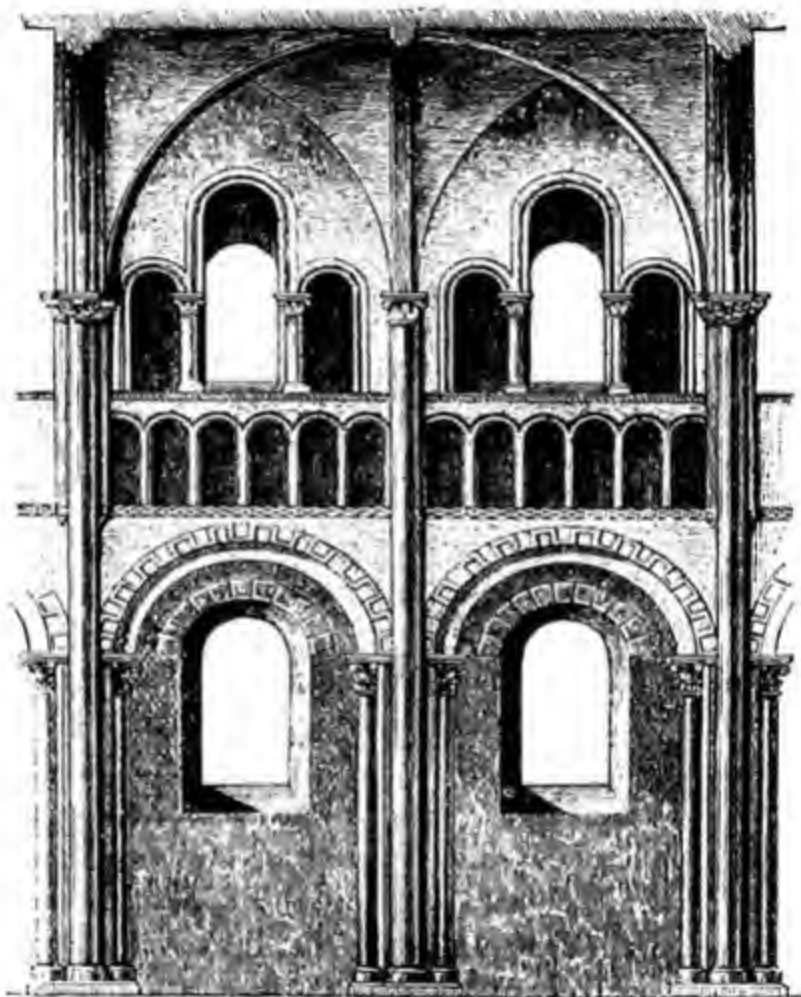
§ 275. The Normans, a Germanic race, which under their leader Rollo, had settled during the course of the tenth century in Neustria, that is to say, that province of Northern France which subsequently received the name of Normandy, brought the Romanesque style to such a state of perfection in the district which formed the scene of their conquest, particularly by the manner in which they brought about an independent development of the system of the vaulted basilica, that the style there prevalent assumes a right to be considered as a special and separate division.

Whilst the simplicity of the entire structure and the general effect bear witness to a Roman origin, yet at the same time there is displayed a rich treatment of details, which, however, never becomes elaborate or excessive. Both piers and arches are moulded, and these mouldings, as also is the case with the entablatures and the capitals, are carried out in a way that corresponds with the organism of the structure, and with a due maintenance of the main elements of ancient art (Fig. 385). The Latin cross forms the ground-plan of the churches, and the aisles, which are continued as far as the apse of the choir, have a rectangular and not an apsidal termination. The aisles, as well as the nave, have a cross-vault roofing, which is supported by quadrangular piers in conjunction with half-columns.

§ 276. The ornamentation, especially that which serves as a rich setting to the arches, consists of the most simple line patterns;

as, for instance, the meander, or the zig-zag, or of bands or fillets occurring in regular succession : frequently, also, it is composed of various enrichments resembling the squares of a chess-board, lozenges, nail-heads, etc., which is a style of ornamentation that

Fig. 385.



Part of the Nave of the Church of the Holy Trinity at Caen, in Normandy.

was frequent in the Romanesque buildings of other countries, and especially in England (see Figs. 353 to 360)

The capitals, which are also simple, when they are not of the ancient type with leaves of a metallic rather than a vegetable character, consist of a cube tapered downwards, and composed of various sub-divisions and mouldings (Fig. 386). At times they even

have vegetable ornamentation (Fig. 387), but seldom exhibit the fantastic sculptures of other Later Romanesque styles.

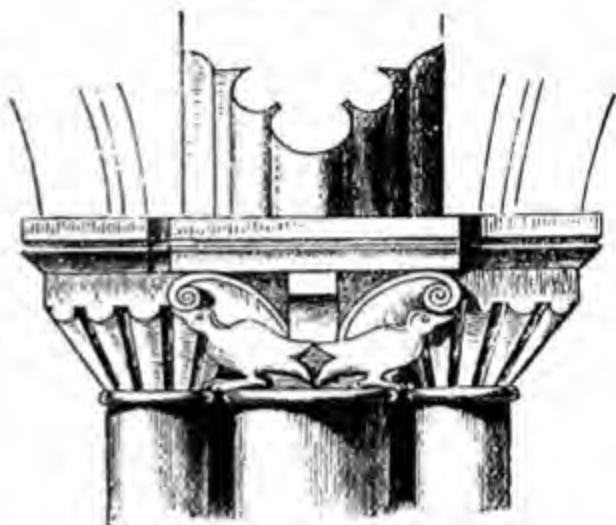
The cornices generally rest on corbels, without an arcade, representing various heads and grotesque figures in rough sculpture.

§ 277. The Western, or main façade, of the churches built in the Later Romanesque style in Normandy, is simple and regular, but at the same time is essentially characteristic, owing to the introduction of two square towers, with narrow windows and niches rising out of the main building (Fig. 388). Viewed from the interior, a space is thereby formed which stands in immediate connection with the building itself, whilst externally they appear to flank the main entrance. These towers are crowned with slender, octagonal pyramidal roofs, covered with scales, at the base of which smaller towers are introduced at the four corners. In large-sized churches there is an additional tower at the intersection of the cross. The façades are divided into several stories by rows of windows of equal size.

It is principally owing to this combination of towers with the façades that the basilica constructions of the Romanesque style in Normandy exhibit a contrast to the cognate structures in Lombardy.

§ 278. A group of buildings, distributed over the province of

Fig. 386.



Detail of Fig. 385, Capital at x.

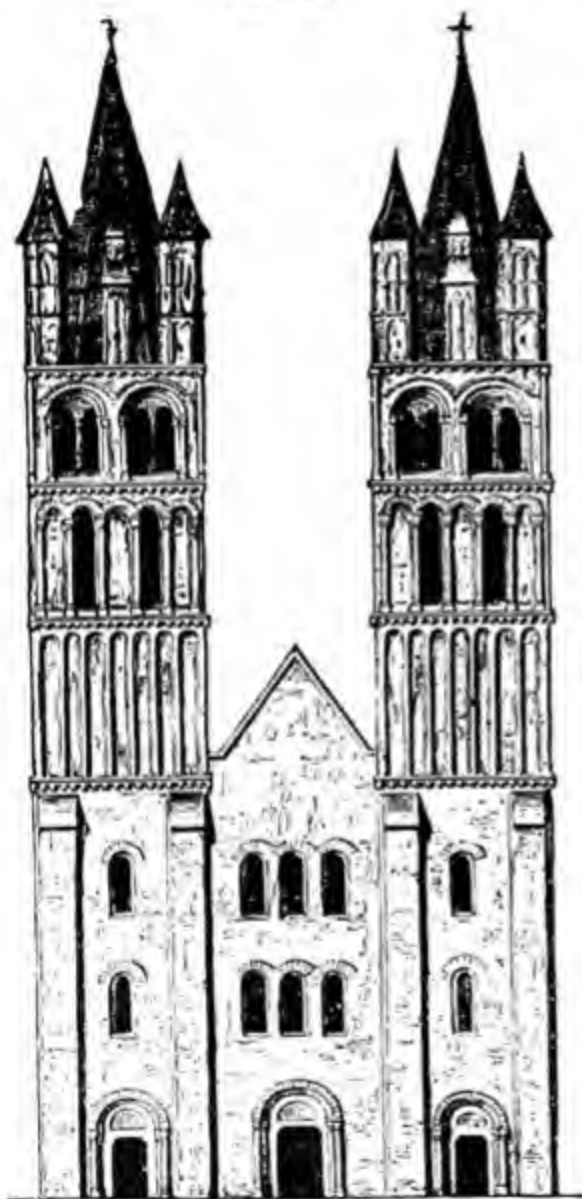
Fig. 387.



Capital in the Cathedral at Senlis.

Aquitania, and constructed after a Byzantine model, forms an exception to the other buildings of France in the Later Romanesque style. These, doubtless, collectively owe their form to the influence

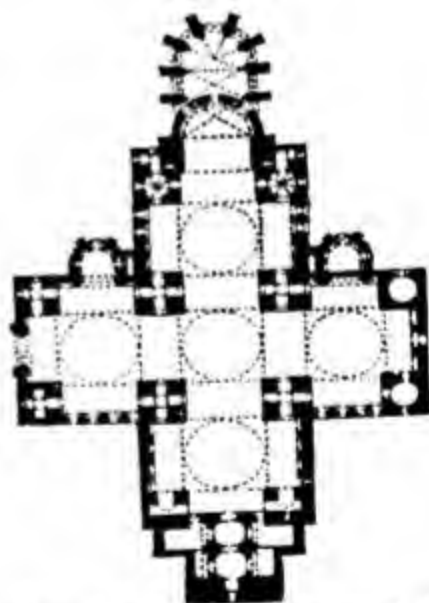
Fig. 338.



Western Façade of the Church of the Holy Trinity
at Caen.

of the Church of St. Front, at Perigueux (Fig. 389), the main outlines of which are in imitation of the Church of St. Mark at Venice. But in this and other churches it is only the main arrangement that is imitated, and even in this respect the model is not always strictly adhered to; inasmuch as the ground-plan of the Greek cross is

Fig. 389.



Ground-plan of the Church of St.
Front, at Perigueux.

generally replaced by the elongated Latin nave. The ornamentation in marble and mosaic is also wanting, and the mode of decoration is different to the Byzantine, so that these churches belong, as regards this detail, rather to the indigenous Later Romanesque. The

real Byzantine feature in these structures is the domical system. These domes generally rest on massive pillars, and assume externally a flattened shape.

Whilst in the above-mentioned churches Byzantine influence is perceptible in the domes, in others which are built after the Later Romanesque principle, it is the internal decoration that points to an Eastern source, to which the introduction of portable vessels, stuffs, and ornaments from the East mainly conducted.

3. NORMAN ROMANESQUE ARCHITECTURE IN ENGLAND.

§ 279. The buildings of the Romanesque period in England, that is to say, at the end of the eleventh and during the twelfth century, were constructed in the Norman style, for subsequently to the Conquest in A.D. 1066, the conquering race introduced their architecture as well as other branches of civilization. English Romanesque architecture is therefore to be considered as a branch and off-shoot of that of Normandy; for while many peculiarities of detail crop up, the main features of the original style are distinctly observed. All the buildings of this period having been constructed in this Norman Romanesque style, it is considered in England as a style *per se*, and is known under the name of "Norman," without the qualifying title of "Romanesque." Few buildings, however, of this period remain, which have not undergone subsequent alterations, and been subjected to many deviations from their original design.

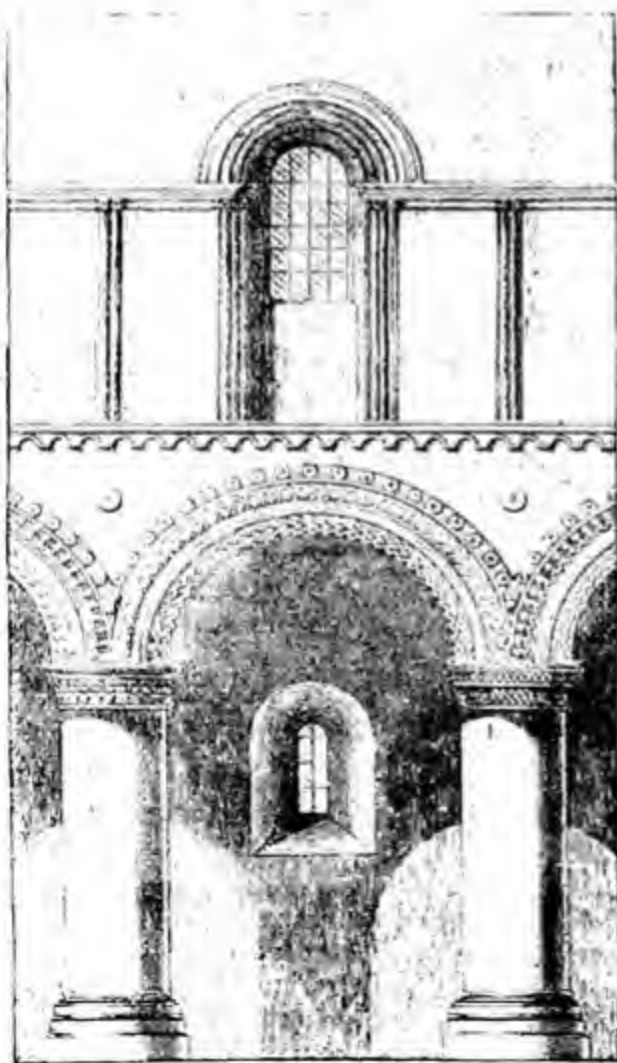
Organic perfection, based on strict simplicity, is not met with in the same degree as in Normandy itself. Very richly moulded features are introduced into heavy masses of building, and more ornamentation is employed, which is introduced in an arbitrary manner; this is partly accounted for by the ruder elements of the Anglo-Saxon period still exercising an influence on taste, and partly by the wood construction, which was peculiar to the country, still manifesting its influence in the barbarous treatment of several

Fig. 390.



Entrance-door in Stenclough Church.

Fig. 391.



Part of the Nave of Steyning Church.

of the details. Fig. 390 may serve as an illustration of these, in which it is worthy of notice that the ornamentation consists, not of animal or vegetable motives, but of lineal combinations.

The naves are usually not vaulted, but have wooden ceilings, adorned with colouring and gilding, and consequently differ considerably in this respect from the vaulted basilica of the usual Norman Romanesque system. Instead of the moulded quadrangular piers elsewhere met with in the arcades and the nave, the usual construction is heavy octagonal or circular piers, which sometimes alternate with columns, and thereby recall to mind the columns of the Early Christian Roman basilica, although the character and proportion are totally different in the two instances (Fig. 391). The capitals are moulded, and bear no resemblance to the capitals of the Later Romanesque styles which were prevalent in other countries. On the other hand the capitals that surmount half-columns and smaller shafts assume a

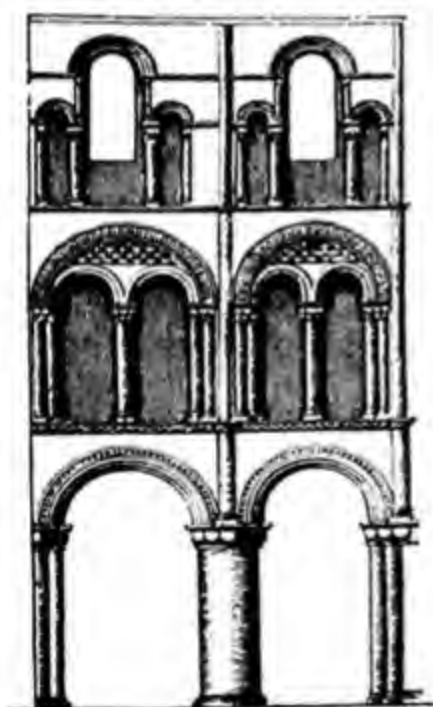
form which is frequent elsewhere, although the execution is ruder and less graceful (Fig. 392). There is usually a gallery over the aisles, with an arch which is generally undivided but adorned with

Fig. 392.



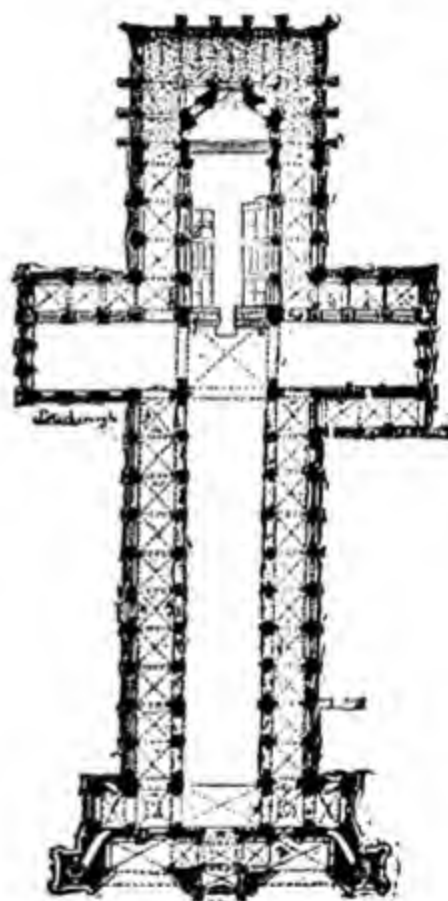
Capital at St. Peter's, Northampton.

Fig. 393.



Part of the Nave of Peterborough Cathedral.

Fig. 394.



Ground-plan of Peterborough Cathedral.

half-columns rising above each pier-arch. Sometimes the galleries are made to resemble a triforium, and are separated from the nave by one or more small columns, and minor arches within the main arch (Fig. 393).

The length of the choir between the apse and transept was gradually increased. (Fig. 394). In fact, the great length in proportion to the breadth forms one of the most essential peculiarities in English churches, whether built in the Later Romanesque or the Gothic style.

Another noteworthy point of difference between the English churches, which were constructed during the Middle Ages, and those of the Continent lies in the fact that, with few exceptions, a straight wall takes the place of the circular or polygonal apsidal termination of the choir.

A strongly-marked mode of enrichment, which resembles either

Fig 395



Fig 396.



Fig. 397.



Ornamented Shafts.

scales or diamonds in its design, is generally employed on the surface of the walls: the arches are ornamented for the most part with the usual zig-zag, and the shafts are embellished with spiral convex flutings, or with zig-zag work, or decorated reticularly with lozenges (Figs. 395, 396, and 397).

Diagonal lines are in general prominently noticeable in the ornamentation.

§ 280. The character of the exterior of the buildings in the Norman Romanesque style in England may be described as heavy and massive. Where the wall-surface is of considerable extent, projecting buttresses, tapering at the top, separate the round-arched windows, as is also the case in Normandy. The windows themselves are generally small. At the point of intersection of the nave and transepts, a quadrangular tower of considerable breadth is frequently introduced, whilst on the other hand towers at the west end are not invariably met with.

Besides the ornaments which have already been mentioned, blind, narrow arcades often occur in the façades and towers, sometimes

interlacing and sometimes not so, in several ranges, one above the other. (Compare Fig. 364.)

The Romanesque style in England consequently exhibits a more independent form, and less admixture of Roman traditions than is the case in other countries; whilst on the other hand the acceptance of the rude Anglo-Saxon elements mentioned in the previous paragraph implants a peculiar impress on Romanesque buildings in England, and forms a point of distinction from those of the Continent. The main features which occurred at the commencement remained unaltered till the close of the period, without any further development or improvement in the style taking place. Norwich Cathedral is the most notable instance of this style.

This Norman style, with the peculiarities referred to, is, moreover, of frequent occurrence in the case of the castles of the feudal lords of that epoch. The nucleus of these buildings, which were in reality fortresses, consisted of a high and massive tower, which served, at the same time as the residence of the lord and for purposes of defence. This tower was only accessible by a flight of steps leading along the wall to an upper storey of the building, and was only lighted by very small windows. Although the style in general was that which has just been described, yet, as regards decoration, the fortress-like character of the whole building was clearly perceptible.

4. LATER ROMANESQUE ARCHITECTURE IN GERMANY.

§ 281. As early as the tenth century, under the rule of the emperors of the Saxon line, architecture in Germany assumed a character peculiar to itself, although its development maintained a connection, as it did in other countries, with the Roman elements that were already existent. Consequently the form of the Christian Roman basilica was retained for a long time in the early period of the Romanesque style in Germany. It was only in the eleventh century that isolated instances of the vaulted basilica occurred, but in the twelfth century it was freely and multifariously employed.

In some churches of the eleventh century, an improvement on

the ancient basilica construction was introduced, in the shape of large arches resting on piers, and rising as high as the window-mouldings, instead of the heavy masses of masonry above the piers which divided the aisles from the nave. Under these lofty arches were constructed others of lesser prominence, which invariably rested on a column, introduced between two consecutive piers.

Fig. 398.



Church of the Holy Apostles at Cologne.

One essential difference between the German Romanesque and the Roman Christian basilicas is the occurrence of towers, in connection with the building, introduced on its west or east side, or sometimes on both sides at the same time. These towers were sometimes round in shape, as, for instance, the staircase-towers of Worms Cathedral (Fig. 403 : see also Fig. 314), or octangular, as in the Church of the Holy

Apostles at Cologne, (Fig. 398), or quadrangular, as in the case of the Cathedral at Bonn (see Fig. 365), or circular and quadrangular at the same time, as in the Abbey-church of Laach (see Fig. 404).

As regards details, what has been remarked concerning the Later Romanesque style in general, holds good in this instance: namely, that the imitations of the antique, which were executed at first of heavy character with rude and grotesque sculptures, assumed in the course of time a more artistic and graceful appearance. The variations which occur in construction and details of form mostly owe their origin to local influence.

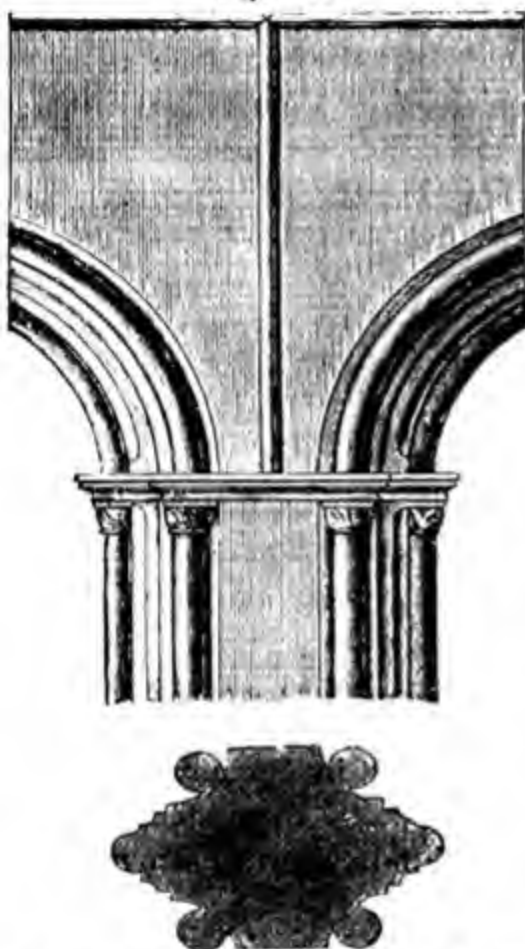
§ 282. The first flourishing and independent phase of German Romanesque architecture was developed in Saxony. This country was the original home of a race of emperors who were intelligent patrons of the arts, and who caused many buildings to be erected in the land of their birth. Later Romanesque architecture received an impress, that gives it a claim to be considered as German Romanesque, apart from the various Romanesque styles of other countries.

The arrangement of the transept and the prolongation of the nave, with the choir raised so as to admit of a crypt beneath, which has already been alluded to, was also effected in Saxony. At the west end, facing the choir, there was always introduced a low vestibule, in immediate connection with the nave, with an arcaded gallery above it.

The separation of the aisles from the nave is mainly effected by piers, inasmuch as basilicas with columns form quite the exception in this part of Germany. (Compare the Church of Paulinzelle at Thuringen.) The intercolumniation of the piers is invariably equal to the breadth of the nave, so that consequently squares are formed on its plan. Columns generally rise between the piers, two ordinarily occurring between each two piers. At times quadrangular piers without columns are met with, either plain or indented with channellings, the richest specimen to be found is in the Convent-Church at Buergelin, near Jena, which was constructed in the twelfth century. The small angle shafts are distinctly separated from the pier by a broadish hollow, whilst the sides of the pier-arches have also a distinctive moulding (Fig. 399).

In accordance with the simplicity of the principal forms, and of the whole design, the details and ornamentation were originally

Fig. 399.



Top of Pier and Spring of Arches in the Convent-Church at Buergelein near Jena.

somewhat simple, and only became richer at a later period, when they were gradually assimilated to those in use in the Later Romanesque style in general. The cubical shape of the capital is of universal occurrence, in conjunction with ornaments representing leaves or stripes. The base is generally the Attic, which after the twelfth century, but not earlier, bears corner enrichments, not in the shape of a leaf, but globular.

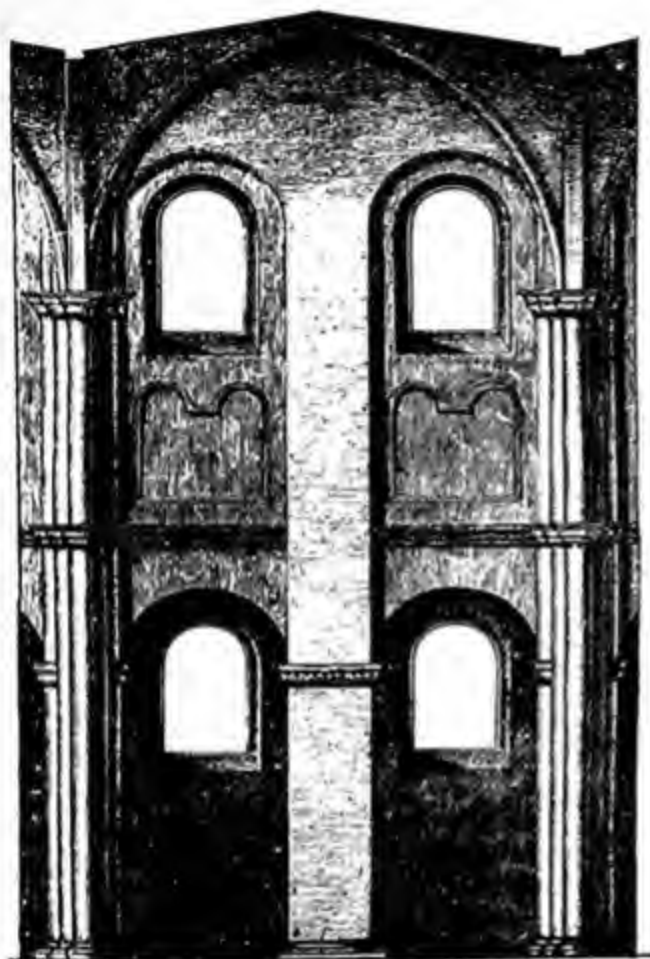
§ 283. In the districts that border on the Rhine the Romanesque style was not developed in so pure and independent a manner as in Saxony. It possesses more in common with the style of the countries inhabited by Romance-speaking populations, partly owing to indirect influence, and partly to the immediate

example of Carlovingian buildings there existing, or of Roman structures of the period of Constantine. The traditions of antiquity were maintained up to the eleventh century.

The elongated basilica with a wooden roof is prevalent as it is in Italy, but rows of piers are generally substituted for the columns. The combination of piers with alternate columns, which is frequently met with in the Saxon districts, is here of rare occurrence. In the Rhenish structures, on the other hand, the construction of the vaulted basilica is common, owing probably to the influences which have just been alluded to, namely, the vaulted buildings of the Carlovingian and Roman periods which the architects of the new

edifices must have had before their eyes. The employment of the vault took place earlier in the Rhine districts than elsewhere in Germany,

Fig. 400.



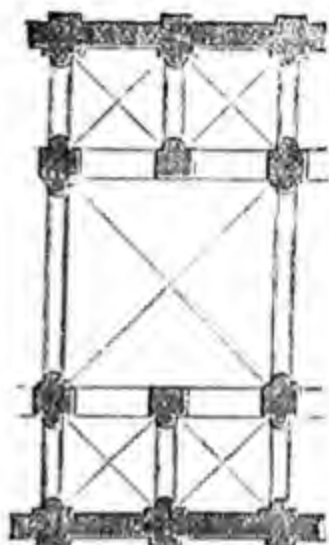
Part of the Nave of the Cathedral at Worms.

and about contemporaneously with its application in Normandy; that is to say, in the early part of the twelfth century, or perhaps even at the end of the eleventh. The nave and aisles are spanned by cross-vaults resting on quadrangular piers: on the aisle side each pier has a half-column, from which the archivolt springs; whilst in the nave, in order to correspond with its greater breadth, this is effected from one pier to the other. By this means a lively alternation of simple and clustered piers is introduced (Figs. 400 and 401). In conjunction with the vaults and their cross and diagonal ribs they convey an expression of boldness and strength to the building, as well as of simplicity which is increased by the walls being bare and the mouldings somewhat tasteless (Fig. 402).

§ 284. The external architecture (Fig. 403), is, as in the Saxon

and about contemporaneously with its application in Normandy; that is to say, in the early part

Fig. 401.



Part of the Ground-Plan of the Cathedral at Worms.

buildings, enriched by pilaster-strips or half-columns. At the intersection of the cross an octangular dome is generally introduced in combination with towers.

Fig. 402.



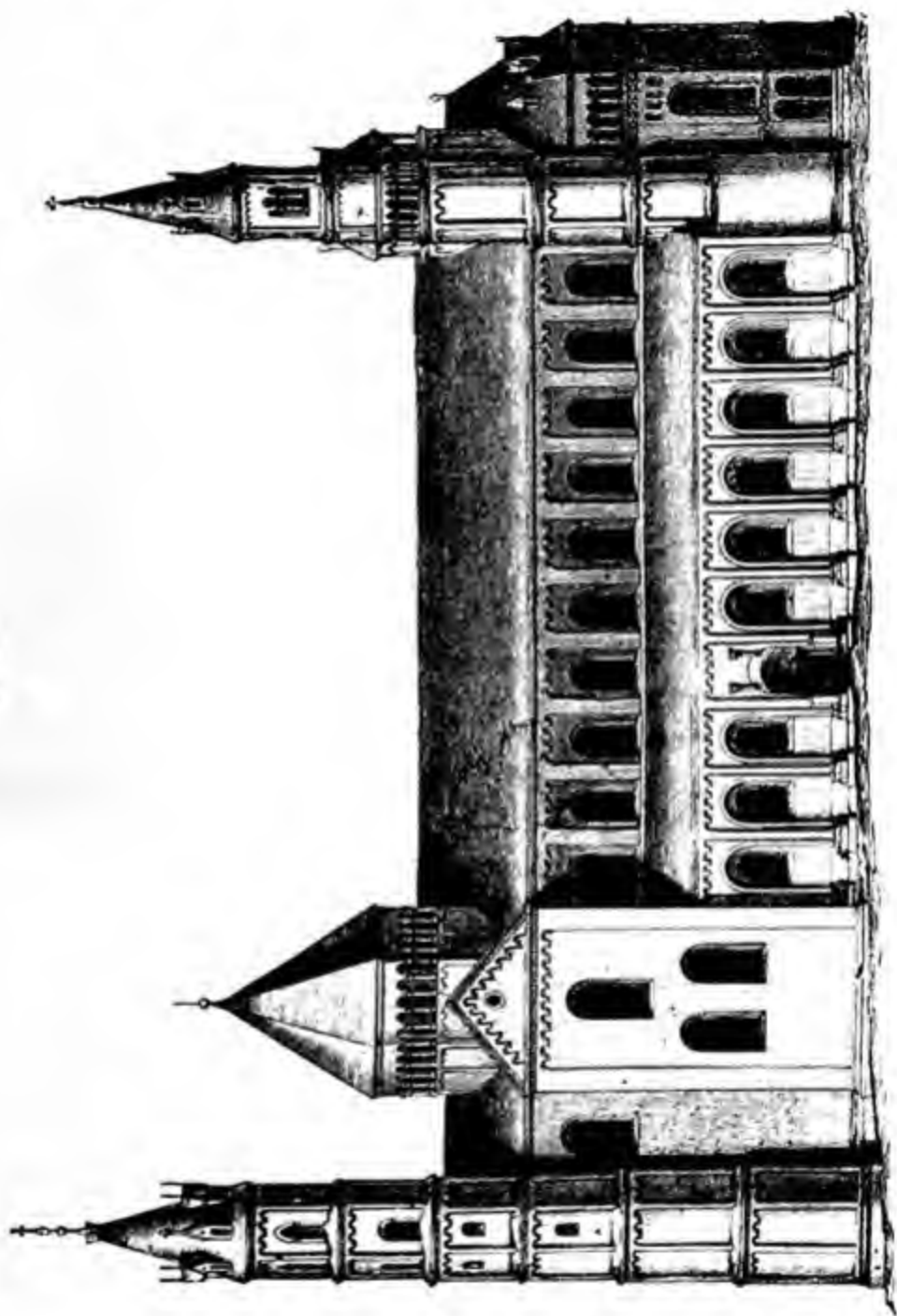
Interior of the Cathedral at Spiers before the recent introduction of Frescoes.

As generally characteristic of Rhenish Romanesque buildings may be mentioned the small arcades supported by pillars, which have already been alluded to in Section 261, which extend as high as the eaves-mouldings. These impart an animated appearance to the exterior, and display an affinity with the buildings of Tuscany and Lombardy.

With the extension of the domical system the details gradually lose their similarity with their ancient types, and display more

accordance with the forms that prevailed in the rest of Germany.

Fig. 403.



South Side of Worms Cathedral.

A corner leaf, or a portion of an animal is generally introduced at the base of the columns.

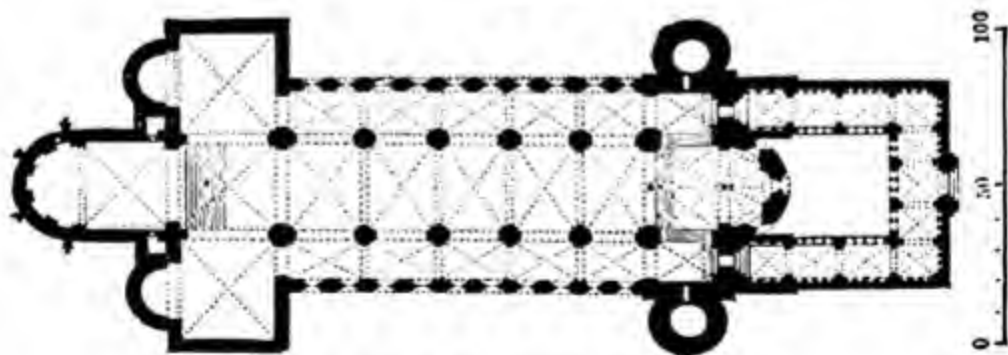
The most eminent examples of Rhenish vaulted basilicas are the

Fig. 404.



View of the Abbey-Church of Laach.

Fig. 405.



Ground-Plan of the Abbey-Church of Laach.

Cathedrals of Mayence, Worms, and Spiers, and the Abbey-Church of Laach (Figs. 404 and 405). In other churches on the Lower

Rhine which were built according to this system the ascending members are wanting, whilst on the other hand galleries resembling triforia are constructed over the arcades. In the later period a rich architectural style of decoration was introduced, which sometimes became excessive. Here and there vitiated forms occur, as for instance the chevroned, indented arches which imparted such a fantastic appearance to the windows.

§ 285. In the Saxon and Rhenish districts the main features of the German Romanesque style are those usually met with; and they impart their tone to the architecture generally. This is also the case in Alsace and Westphalia, where the domical construction was also the prevailing one, whilst in other districts the basilica style held good its ground, although it did not reach such a high style of perfection as was attained by Saxon buildings.

The buildings in the neighbouring country of Belgium show a marked affinity with the German, and especially with the Lower Rhenish. Many churches, however, of the tenth century display the stamp of a somewhat earlier age, but yet exhibit no peculiarities of style, which require particular description, as differing essentially from the Romanesque style in general.

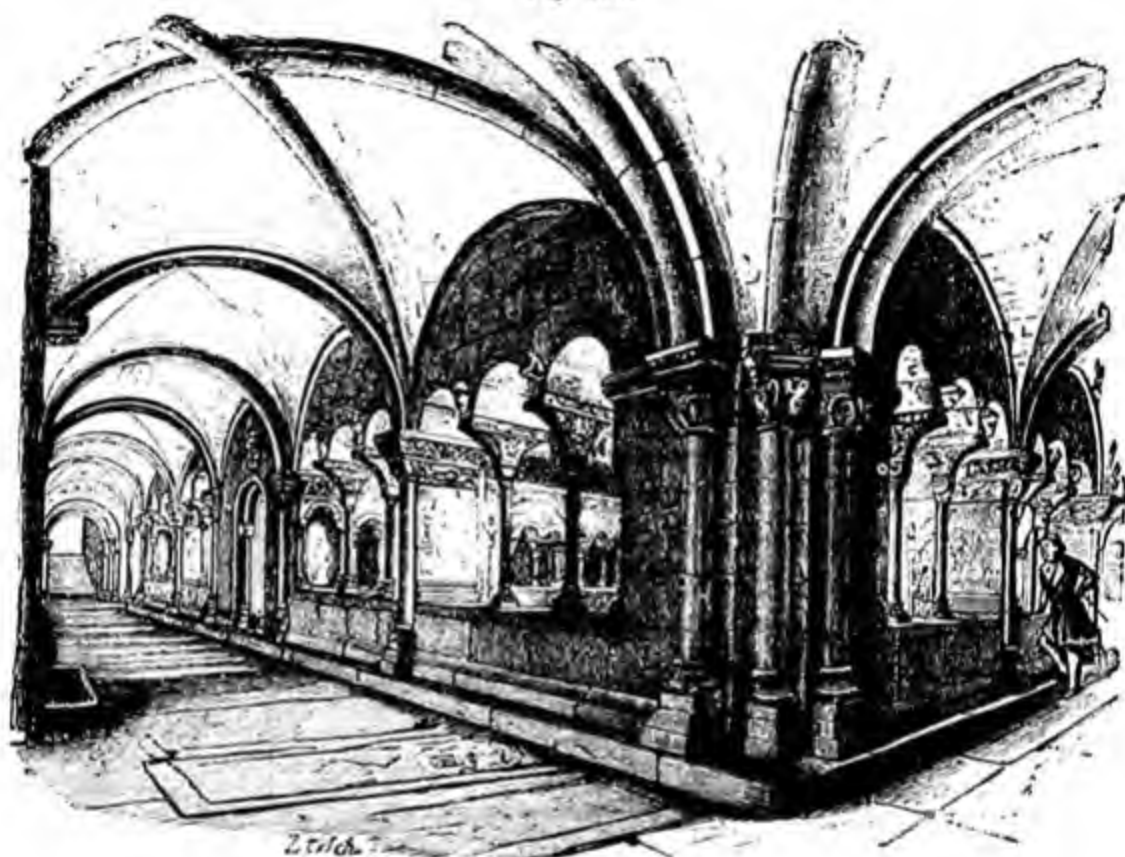
§ 286. Besides the German Romanesque basilicas, larger or smaller circular buildings with domes are also met with, especially in the earlier period of the Later Romanesque style. They present points of resemblance with Byzantine architecture, and generally served as Baptisteries or Chapels. Those that occur towards the end of the period, that is, in the twelfth and thirteenth centuries, were built as chapels for castles and palaces; and they frequently occur constructed in such a way that a second chapel is built over the first; the two being connected one with the other by an opening in the vaulted ceiling which separates them.

The German Romanesque style displays much picturesqueness in the conventual buildings which were erected at a late period of its prevalence, and this is especially noticeable in the cloisters which surround the interior court (Fig. 406).

The castles built in this style were also picturesque in their appearance, inasmuch as the façades were decorated with pillared arcades, resembling cloisters, and with rich doorways and windows.

The interior had pillared halls and various decorations in accordance with the exterior.

Fig. 406.



Cloisters in the Monastery at Zurich.

§ 287. In the latest period of the German Romanesque style, especially in buildings on the Lower Rhine and in Belgium, the Pointed arch is met with as a subordinate and almost accidental form, in combination with slenderness of construction and richness in ornamentation. The Pointed arch is thus introduced at a time when it had not yet been developed into an independent system and characteristic architectural style. It probably found its way into Germany together with many other Mahometan forms, either through direct connection with the East or through the instrumentality of Italy, in which latter country it had already gained ground; or by the medium of the Normans.

The application of the Pointed arch, which first occurred in isolated instances, and subsequently more frequently, must be

regarded as a transition from the Later Romanesque to that style in which the Pointed arch occurs as a thoroughly developed system, a style which will be treated of in the following division of the book as the Pointed, and which is sometimes incorrectly designated as the Gothic, or German; though the former of these two designations has met with nearly universal acceptance.

The style of the buildings constructed in this period of transition, when the Pointed arch was struggling for supremacy with the circular, or when the former was subordinately blended with it when the latter predominated, has consequently been designated "The Transition Style."

This transition, the duration of which is characterized by the simultaneous existence of the Pointed and the circular arch, and in which the tendency of the Pointed style towards more slender and graceful forms is clearly perceptible, does not occur in such an unprepared and inorganic manner as in the Norman Romanesque buildings in Sicily, inasmuch as no sudden national change took place in Germany as it did in that island, where a Mahometan race in a high state of cultivation were subjugated by a Northern Christian nation which was but just emerging from barbarism.

The trefoil and indented arches represented in Figs. 317 and 318 are especially characteristic of the Transition style; in the first-mentioned arch the top segment of the circle often assumes the pointed form, and with this modification the trefoil arch frequently forms the covering of apertures and arcades.

The simple mouldings of the architraves, archivolt, and ribs are rendered more animated by cavetti and astragals. In shafts annular mouldings are sometimes introduced at the middle—whilst the cubical form of the capital gradually yielded to a more slender one, consisting of leaves spreading upwards, curved round at their upper extremity in the shape of a knob or bud (Fig. 407). In the

Fig. 407.



Capital of the Transition Style in the Church of St. Sebaldus at Nuremberg.

base the torus was generally made to overlap the plinth, and the hollow was cut deeper.

The windows, which now generally began to assume larger dimensions, were generally divided by shafts, and grouped together in such a way that the central window exceeded the two others in height. This form of window was not unknown, however, at an earlier period (see Fig. 385).

The Transition style prevailed longer in Germany than elsewhere, whilst its duration was shortest in France, in which country churches were erected in the Pointed style as early as the twelfth century.

Amongst churches that are built in the Transition style the following are especially noteworthy: the Church of St. Gereon at Cologne, and the Lower Rhenish churches at Heisterbach, Andernach, and Boppard. In many larger churches the time of their completion falls in a striking way within the Transition period, whilst in others only individual parts belong to that epoch, as, for instance, the eastern part of Bamberg Cathedral.

It must finally be remarked that churches in the Later Romanesque style were also erected in Spain, although that country was under Mahometan sway during the prevalence of Romanesque architecture; these churches, however, bear with few exceptions the impress of the Transition style, and resemble the French Later Romanesque buildings more than any others.

The transition from the Later Romanesque to the Pointed style is shown organically in many churches in Saxony, Thuringia, Hesse, and Franconia, for in these buildings the pointed arch is already connected with the artistic structure. The style of the circular arch is, it is true, still employed externally in these churches, but the Pointed arch prevails in the interior, though the principal features of the Later Romanesque circular-arched style are retained in the details, such as the mouldings, capitals, ornaments, &c. The piers, however, are moulded and connected by moulded Pointed arches, and the vaultings are usually carried out in the Pointed arch form.

V.

THE POINTED STYLE,

(CALLED ALSO THE GOTHIC OR GERMAN STYLE.)

§ 288. The question which still remains undecided in the history of Art, as to the origin of the Pointed arch in Germany and in the West generally, might properly remain untouched in this volume, inasmuch as it is the design of the present work merely to characterize the various styles in their simplicity and in their different phases, and not to give the history of their rise and development; although so far as is indispensable for a necessary apprehension each style is prefaced by a few general explanatory remarks.

It is, however, necessary to observe at the outset that the appearance of single specimens of the Pointed arch in the period of the Later Romanesque style ought not to lead to the conclusion that a Pointed style was then in existence or was known as a system.

Forms approaching the Pointed arch, as, for instance, the spurious pyramidal vaultings in ancient Egypt, and in the Grecian Treasuries, the apertures in Cyclopien walls formed by means of blocks leaning one against the other gable-wise, and similar forms in the grotto-temples of India, have neither technically nor æsthetically any connection with the Pointed arch. So again, even the real Pointed arches which are met with in the Assyrian aqueducts and tombs have no connection with or relation to the Pointed style of the Middle Ages. Such isolated forms, if they spring from the requirements of Art, may arise and find application in any age.

§ 289. It is however indisputable that the Arabs were the first systematically to apply the Pointed arch to architectural purposes, although their arch was not organically complete: but a Pointed system, that is, a style of which the Pointed arch is the elementary

basis and which pervades the entire construction and which is interwoven with it, was first developed in the thirteenth century at the close of the Later Romanesque Period, and in northern countries, independent of foreign influences, and only received different modifications from the operation of local causes. For in that century we no longer find the Pointed arch in isolated instances, but all openings without exception, as well as vaultings or arches, assume the Pointed form.

Again, although the Pointed arch is said to have been borrowed from the East, and especially from the Arabs, yet it was not till later that a Pointed architecture was created, which satisfied the wants of a northern climate, of the German mode of thought, and the tendencies of German art.

It is consequently not surprising that the Pointed style of architecture did not meet with a complete reception in southern countries where the same influences were not at work, and where ancient traditions were more persistently maintained.

This style flourished more especially where the German element prevailed. In German countries it was most widely spread and received its noblest development, whereas in those in which the Romanesque sentiment predominated, it never attained any harmonious perfection, and instead of following a characteristic development it bore rather the impress of caprice and accident.

The usual designation "*Gothic Style*," took its rise amongst the Italians. By it they meant to distinguish a barbarous from a classic style, and this inapt appellation has become so familiar that it is difficult to get rid of it. For want of a better name, the term "*Pointed Style*," might in all cases, for the reasons above stated, be preferred to a term which signifies nothing, and which is only used from force of habit. The earlier employment by the Arabs of the Pointed arch involves no contradiction, for the mere appearance of the Pointed arch in the Arabian style does not stamp the same as a Pointed style. In the meanwhile, however, it would be convenient to recognize the German Pointed, besides another pre-existent style which has already been alluded to in Sect. 216 as the Arabian Pointed style: and here the distinctive terms "*German and Arabian*" suffice to avoid all perplexity or confusion.

§ 290. Something, it is true, more positive and precise is wanted respecting the origin of this style; but we may observe that there are grounds for attributing it to the Normans, as we see it first making its appearance in the eleventh century in structures erected by this race in the north of France and later in England. The pointed arch was developed by them into a system as early as the twelfth century.

It is, of course, possible that a general transition took place simultaneously in Germany, inasmuch as the pointed arch was adopted in lieu of the round arch of the Basilicas, of which we see instances in the early churches of Saxony.

It is most probable that after the conquest of Sicily by the Normans, their acquaintance with the Moorish Pointed architecture of that island did not remain without influence on the taste and art of the land of their birth, inasmuch as the connection between the two was continuously and intimately maintained, and that this was the cause of the adoption there of the pointed arch; for this arch being substituted for the round arch of the usual vaulted basilicas of the Romanesque style, thenceforth led to a new and distinct system, differing essentially from the Arabian, although not by any means consisting of new elements. For besides their relationship to Arabian architecture, the forms of Early Christian, and especially of Romanesque architecture furnished a basis for further development; inasmuch as these forms, when conceived in a new spirit, had necessarily to receive a new and peculiar impress.

§ 291. Besides the social revolution of the twelfth century with its efforts to extricate society from the bonds of the Church, the fraternities or guilds of masons, from whom the Freemasons derive their origin, may have contributed greatly to the completion of the pointed arch, the system in all its parts, as well as in the unity and harmony of its entirety, being passed from fraternity to fraternity.

These fraternities were probably formed as early as the period of transition between the Romanesque and the Pointed styles, in order to afford a counterpoise to the organizations of the priesthood. For until the twelfth century architecture in the north of Europe was in the hands of the monks and clergy, whose prejudices led them to cling to the Romanesque round arch even in the period of transition;

whereas, on the contrary, wherever the influence of the priest was less dominant, and the spirit of freedom had penetrated more deeply, the architects were laymen, styled work-masters, whose aim and object was the spread of the Pointed-arch style, which now became the expression of the new era, whereas the Romanesque round arch was considered as identical with the feudal domination of the old social condition. In addition to this, the rising prosperity of the cities stood in contrast with the prostration of the feudal system, and these cities vied with each other in the erection of splendid structures, and especially, in their religious zeal, sought to rear magnificent specimens of ecclesiastical architecture.

§ 292. It was in the middle of the twelfth century that the pointed arch began to be applied in the internal vaulting of churches; in the thirteenth century its use had become general. At its very commencement it quite expelled the round arch, and in the course of the same century it attained high perfection in the style peculiar to itself.

From the beginning of the thirteenth century downwards, or a few years sooner or later according to the various countries, all religious, civil, and military edifices were constructed in accordance with the Pointed system; nevertheless, whereas the pointed arch itself prevailed to the exclusion of other styles in ecclesiastical building, other structures, such as castles, town halls, and dwelling-houses, exhibit different forms, either in combination with the pointed arch, or even without its employment at all—as, for instance, depressed arches, horizontal arches, and less often the round arch.

§ 293. The duration of the Pointed style, like the epoch of its introduction, differs both with the country of its origin and the description of the building. Although from the very beginning of the fifteenth century divergences arise, as forerunners of modern art, the duration of the Pointed style extends nevertheless into the sixteenth century. Not merely its duration, however, but also the particular stages of its development, differ according to country and description. The characteristics of these differences will be hereafter separately examined, but the universal principles of the Pointed-arch style must be previously determined.

§ 294. The most essential part of the Pointed style—the part

whereon its whole structure and organization depend—is the pointed arch itself. This consists of two segments of a circle, meeting at the point of the arch. The longer the radius of these segments, the slenderer is the pointed arch which it describes.

In the thirteenth century, and more especially in the best edifices of this style, the pointed arch forms an equilateral triangle (Fig. 408), or approximates to one; whereas at its origin in the twelfth century the base was broader than the sides, which made the arch appear somewhat compressed and heavy (Fig. 409). In the fourteenth century, on the contrary, the base became shorter and the sides longer (Fig. 410); but here it must be remarked that this is not in

Fig. 408.



Fig. 409.



Fig. 410.



Shapes of Arches in the Pointed Style.

all cases a general rule: on the contrary, many exceptions occur. In the pointed arch of the fifteenth century the proportions become very unsettled, for during that period no rule seems to bind the architect, and elaborate decorations prevail.

§ 295. Besides the simple pointed arch there often appear, and especially in the transitional and the later eras, arches which are

Fig. 411.



Fig. 413.



Fig. 415.

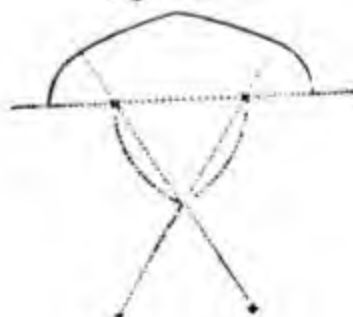


Fig. 412.



Fig. 414.

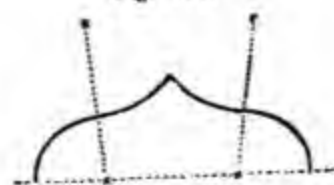
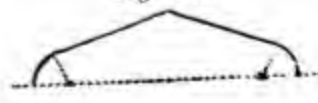


Fig. 416.



Shapes of Arches in the Pointed Style.

compounded of triple and quintuple arches, in the form of trefoils and cinquefoils (Figs. 411 and 412), which are used especially in

panelling, in niches, and in narrow openings; as also the ogival arch, or so-called ass's back (Figs. 413 and 414), and the cornice arch (*arcade en talon*, in French), which, however, owing to difficulty of construction, was not applied to wide openings. There occur, moreover, in the last period of the style, other arches described from four centres (Fig. 415), which were bold at first, but gradually became more depressed, until at last the whole principle and form of an arch were lost, for it became so flat that it was cut out of a single stone; it was employed as a lintel over doorways. In the decline of the style the sides of this arch in England are quite straight lines, with the exception of the spring from the impost (Fig. 416).

§ 296. Independently of the arch, the Pointed style is especially distinguished from all other methods of building by a peculiar system of proportions, construction, and ornamentation.

(1). With respect to the system of proportions, we must remark that one essential difference between it and those adhered to in Classic architecture consists in the fact that, whereas the latter depends upon certain proportions of column and entablature, both individually and reciprocally, in the architecture of the pointed arch, in which the horizontal entablature does not occur above the support, the system of proportions has reference mainly to the breadth and height of the various spaces, and their relative relationship to one another. In the external architecture a system of proportions has also been applied to surfaces, in which perpendicular divisions predominate and supplant the horizontal, and thus confer on the whole construction a soaring character, which frequently resembles the upward growth of plants. The ratio of the proportions between spaces and constructive parts has been erroneously attributed to symbolic elementary numbers. It is true that in many structures a fundamental measure does exist; that is to say, that some definite dimension employed in the buildings—as, for instance, the intercolumniation, or the breadth of the nave—is taken as the unit, and then the other dimensions are determined by multiplication or division;* but notwithstanding this, in most structures of the best

* The Church of St. Elizabeth at Marburg will serve as an instance. There the intercolumniation and the breadth of the aisles, both reckoned from the axis of the pier, serve as a unit (18). This unit, when doubled, gives the breadth of the nave and the height of the principal entrance doorway (36). If it is taken four times, the

period no measure of length that occurs in the building will give the exact proportions of the other dimensions.

§ 297. (2.) The system of construction necessarily also became an entirely different one, and essentially distinct from that which preceded it. The new and slender forms, with their intermixture of lines and their continually projecting and re-entering angles, necessitated new static laws for their construction, both on account of the great height of the structures and of the lightness of the supports and the predominance of spaces unfilled with masonry over the constructive parts. The massive Roman vaultings hitherto in use could no longer be applied, since the vaulting system of the Pointed style depends upon a series of moulded main and intermediate ribs, the actual vault being merely a light filling-in. The originality of Pointed architecture and the universality of its application are grounded mainly on this method of vaulting.

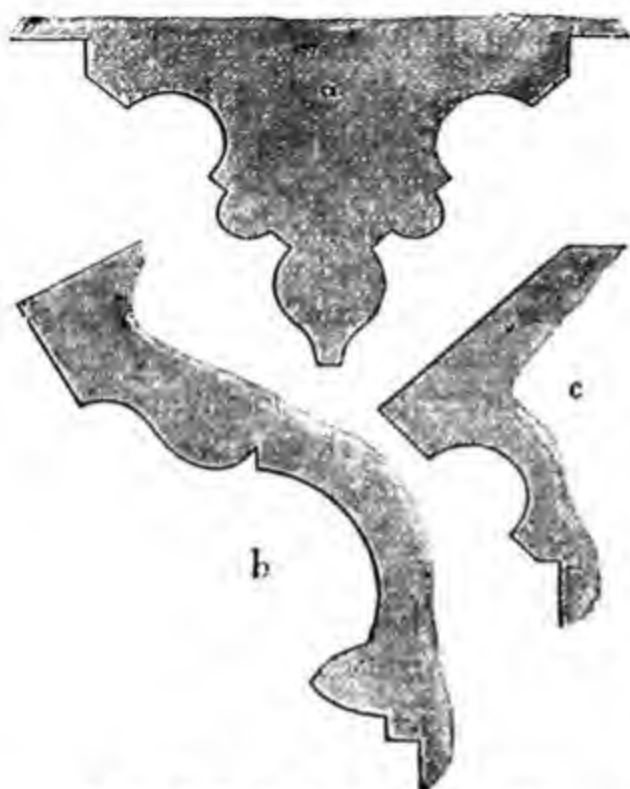
§ 298. (3.) In the ornamentation of the Pointed style, and indeed throughout its whole construction, two elements especially prevail—the forms of geometry and the forms of the vegetable world. Neither of these predominate in the buildings of the best period, whereas in the decadence of the style, owing to the undue prominence of either the one or the other, there arose on the one hand barrenness or artificiality, or a delusive mimicry of nature on the other.

As regards ornamentation, the Pointed style secedes decidedly from ancient traditions and from the more modern models of the Later Romanesque. The profiles of the mouldings, both on the ribs of piers and on vaultings, in which the Roman model had been hitherto discernible, are of a new sort (Fig. 417, *a, b, c*), constituting a type just as characteristic as are the species of ornamentation and their mode of treatment. The enrichments are especially copied from plants; whilst the eggs, the pearl-beading, the heart-pattern of the Classical period, and the nail-heads, diamond-points, the cants, and lace-like decorations of the Byzantine and Roman-

clear breadth of the nave, inclusive of the aisles, is arrived at, as well as the internal height of the vaulting (72). If it is multiplied eight times, we get the external length of the transept with its buttresses—that is, the greatest breadth of the Church (144); if six times, the height of the gable is ascertained (108); if twelve times, the length of the interior, including the doorway (216); if thirteen times, the whole external length (234); and if fifteen times, the height of the tower (270).

esque styles are no longer to be met with. The choice of plants is

Fig. 417.



Profile of Mouldings and Vaulting-rills.

no longer confined to the classic ground of Greece and Italy, but the selection is extended to the leaves of the oak and beech, the ivy and the strawberry, to the vine leaf, to the mallow, the thistle and the endive, and to many other plants common in our soil and climate. The treatment of these vegetable enrichments, with which the archivolt and hollows are covered, and of which the capitals are composed, no longer exhibits the conventional and idealized forms of antiquity, nor the more fantastic shapes of Byzantine and Romanesque architecture, but merely a faithful imitation of natural objects, which are executed in the shape of roses or flowers, or of clusters of leaves in the spaces of the

Fig. 418.



Fig. 419.



Mouldings with embellishments of leaves from Cologne Cathedral.

hollow portions of the mouldings, as also on the frieze (Figs. 418 and

419). When so applied, the leaves are to a large extent during the later periods connected together with stalks, which give a bold effect to the ornamentation, though it sometimes borders on stiffness. It is, moreover, boldly undercut, and seems to be connected with the mouldings merely by the stalks and corners (Figs. 420 and 421). On the other hand, in the early period of the Gothic style, the

Fig. 420.



Frieze Enrichment in the Church of St. Amandus at Urach.

Fig. 421.



Intersected Frieze-work in Rouen Cathedral.

mode of treatment peculiar to the Later Romanesque is shown by many examples—as, for instance, in Notre Dame at Paris—not to have been entirely abandoned (Fig. 422). In the later period of the Pointed style this ornamental foliage assumed shapes that deviated from nature, appearing in wavy and sharply curved forms, resembling bulbs and knoblike excrescences (Fig. 423).

The ornamentation of the Pointed style has this in common with the antique, that one system pervades the whole, inasmuch as the

Fig. 422.



Early Gothic Ornamentation in Notre Dame at Paris.

various analogous parts of a building are carried out in accordance with one uniform type and are thus distinguished from the Byzantine and Romanesque, in which there

Fig. 423.



Rocket in the Chapel attached to the Martinikirche at Brunswick.

is the greatest variety both of form and decoration; whereas in Pointed architecture there is one general characteristic form throughout, so that piers and pillars, whether simple or clustered, bear all the same type and display the same profile.

The ornamentation of Pointed architecture develops, moreover, in each of its phases such manifold characteristics, that, although these present only shades of difference, yet it is possible by their instrumentality to determine the date of the structure.

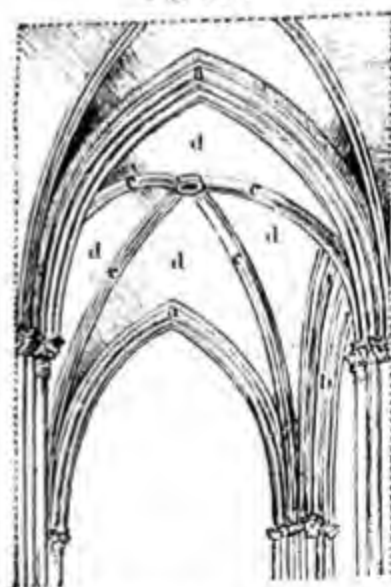
§ 299. The systems just alluded to were, however, only applied to the Pointed architecture of the north of Europe. In the South, particularly in Italy, the Pointed style was never developed into the entirety of a distinct system in accordance with definite laws. Degenerate classical art continued to maintain a certain influence, which yielded only at a later era to the renaissance of the pure antique, in which the East also played its part. The nature of the Pointed style which was introduced into Italy from the North was

necessarily entirely changed, when it was applied only in connection with the most various elements which were foreign and even antagonistic to it. The admiration which is indubitably excited by many edifices in Italy in the Pointed style—as, for instance, by the cathedrals of Sienna and Orvieto—in spite of the want of any organic principle, is due principally to the splendour of the material, to the poetry of the climate, to many an echo of the antique, and to the elegance of the details.

§ 300. The essential features of the Pointed style will be best illustrated in ecclesiastical architecture, inasmuch as it was first applied to buildings of that nature, and in them, moreover, attained its highest state of perfection. The ground-plan and main arrangement remain in essential points, with some few modifications to be mentioned hereafter, as they were in the vaulted basilicas of the Later Romanesque style. But the principal point of difference, and the peculiar and predominating characteristic of the Pointed style, is shown in the structure of the whole, which, although it is equally based on the application of the cross-vault, employs it in a manner essentially different from that of the Later Romanesque style.

Instead of the four-square bay, up till then in use, a narrower rectangle was now employed for cross-vaults. The whole support of the weight is divided between moulded transverse ribs (*a*, Fig. 424), which pass from the pier of one side to that opposite it on the other, the pier-arches (*b*), which form a right angle with the above-mentioned transverse ribs, and the diagonal ribs (*c*). In this way a framework of arches is formed (ribbed-vaults), resting on the vertical supports from which they spring, so that the vaulting itself only appears like the filling-in of the network of the ribs that carry it, and assumes the shape of triangular surfaces called ogives, or vaulting-cells (*d*). The whole

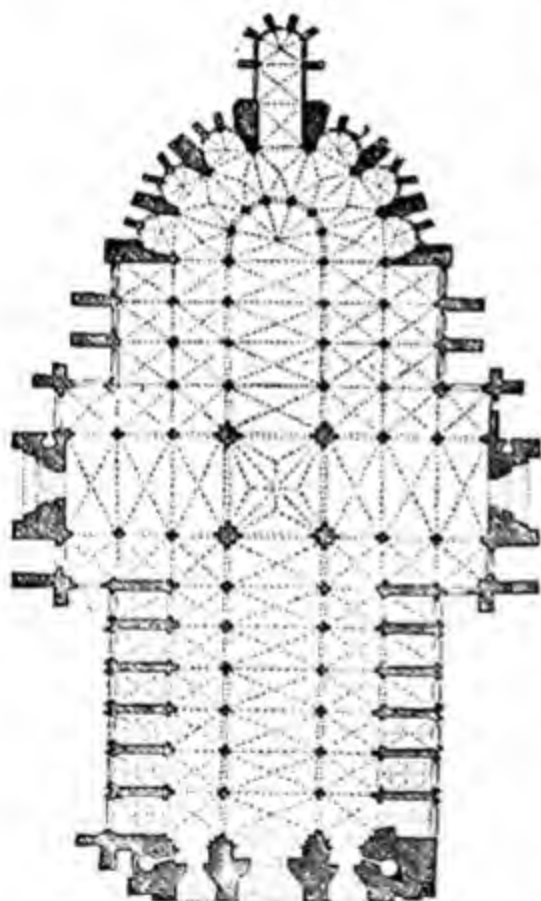
Fig. 424.



Groin-system of the Cross-Vault.

thrust of the vaulting is accordingly no longer uniform, but divided over individual points of the external wall, which are purposely constructed of greater strength. These points of resistance are consequently brought out prominently, appearing internally as supports of the ribbed vaults, corresponding to the independent piers, and externally as strong resisting masses of masonry, or buttresses, whose

Fig. 425.



Ground-plan of Amiens Cathedral.

capability of resistance is still further augmented by flying buttresses. The lighter and more open parts of the wall between these points of resistance are, on the other hand, to be considered as having no importance in the organism of the structure. Inasmuch, then, as this organism consists of a system of purely vertical piers connected by means of pointed arches, an airy and soaring character is thereby peculiarly imparted to the Pointed style, and is heightened by architectural decorations corresponding with the system.

§ 301. As a further point of difference from the internal arrangement of the Romanesque churches, it must be mentioned that crypts, and the elevation of the choir which was thereby

necessitated, do not occur in the Pointed style; the choir itself, moreover, was no longer shut off from the body of the church in such a marked manner.

Instead of the isolated semicircular apse of the Early Christian and Romanesque styles, the eastern termination of the choir assumed a polygonal shape, with vaulting that blends with the whole. The choir itself was enlarged, and raised two or three steps at the most, and separated from the body of the church by a low railing; subse-

quently, however, this demarcation assumed higher proportions, and gave rise to the rood-screen. Not only was the choir lengthened, but a passage was constructed round it by means of aisles, which were formed either by the series of piers of the nave being continued round the transept (Fig. 425), or by the transept forming a break in the continuity, and the piers being resumed in the choir. At a later period a series of chapels was frequently connected with the choir, a polygonal addition in the form of a chapel being introduced on each face of the polygon which formed the choir itself. The nave-aisles had also at times a series of chapels attached to them.

Owing to this transformation of the choir, a church in the Pointed style produces an essentially different

Fig. 427.

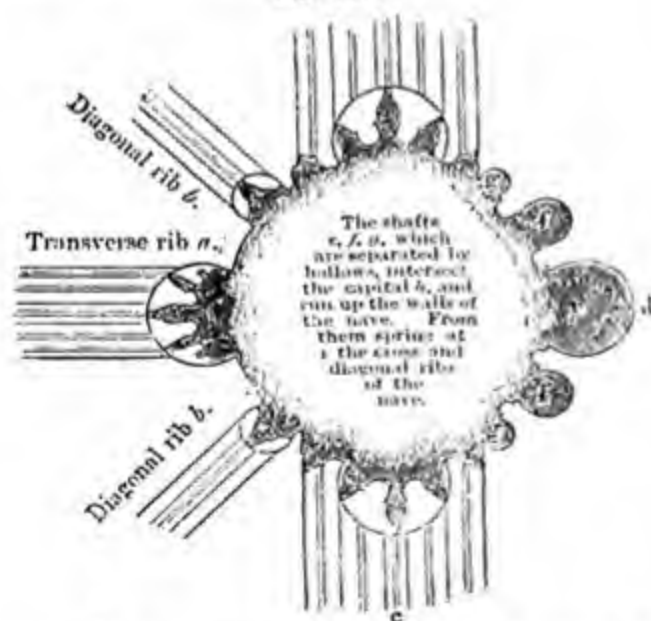
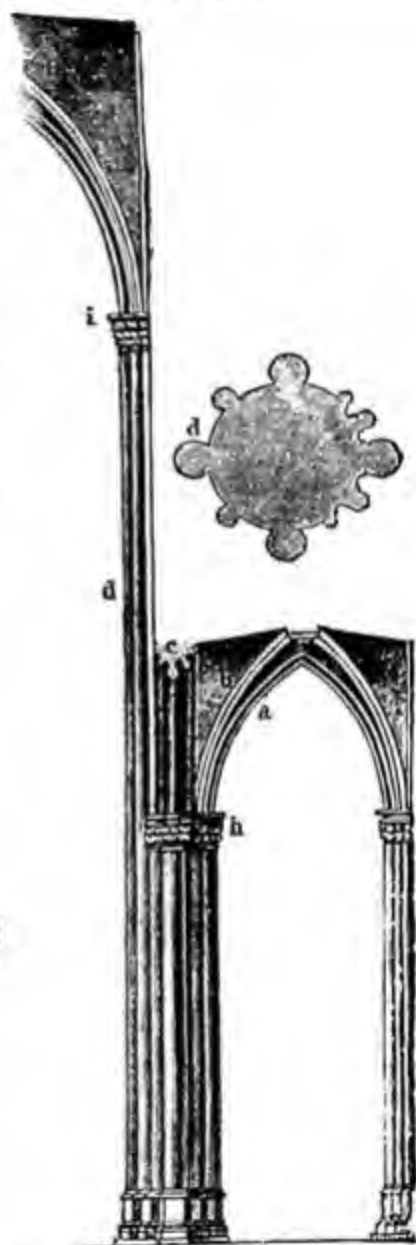


Fig. 426.



Pier-formation with Spring of the Archivolts in the Cathedral at Haiberstadt.

effect from that produced by a Romanesque church—in the latter is severity and repose, whilst in the former is rather life and activity, together with splendid and picturesque effects.

§ 302. Owing to the abolition of the square plan of the cross-vault, the former system of the subdivision of the nave by repetitions of the leading square was also abandoned ; for the piers were not any longer diversified, but all formed alike, and square bays are no longer marked out by the vaulting.

The intercolumniation of the piers often exceeds half the breadth

Fig. 428.

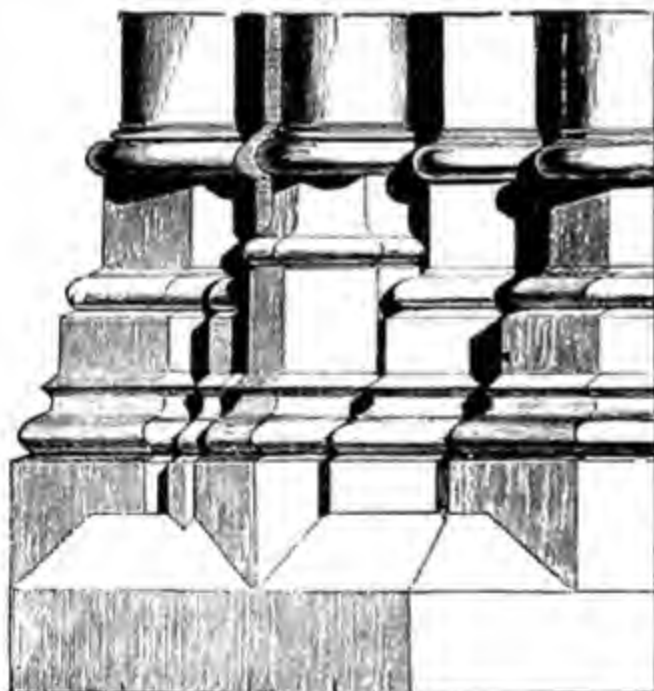


Fig. 429.



Pier-mouldings.

Fig. 430.

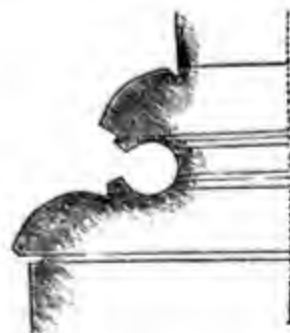


Construction of the Base of clustered Piers.

of the nave, but seldom attains two-thirds of its breadth : the individual subdivisions consequently form rectangles, and not squares. The consequence of this manner of division is, that the height appears greater and the construction more slender than would be the case with similar dimensions in the Romanesque style.

§ 303. The most characteristic features in the Pointed style consist in

Fig. 431.



the application of the pointed arch itself, in the construction of the detached piers which are richly moulded in a perpendicular direction, and in the buttresses and rib-vaultings, with their own peculiar mouldings.

As regards the detached piers which support the archivolt, during the early period they had the form of a column flanked, as in the square Romanesque piers, by half-columns or rather three-quarter-columns, or bowtells, which support the rib-vaultings (Fig. 426 and 427). These columns are provided with capitals in the

Fig. 432.



Capital in Naumburg Cathedral.

Fig. 433.



Capital in Cologne Cathedral.

Fig. 434.



Capital in Cologne Cathedral.

Fig. 435.



Late Gothic Capital in the Frauenkirche at Esslingen.

aisles and under the pier arches, as also is the column itself; but in the nave they are continued to the spring of the vault, either without a capital or with mere traces of one. The four vaulting-shafts, which correspond to the perpendicular and diagonal ribs, are more massive than those which serve as supports for the transverse ribs.

As the system became more developed, the round shape of the cylindrical pillars is scarcely recognizable any longer, for the whole is made up of shafts more or less slender, according to the importance of the rib-vaulting they are destined to support, and separated from each other by hollows (Figs. 428 and 429). These are called clustered or compound piers. The number and distribution of the shafts vary, and occasionally opposite sides of the pier do not correspond with each other.

§ 304. The base has generally the form of a square placed diagonally and rounded off at the corners, and consisted at first of a simple plinth, on which the base of each individual shaft rested in the shape of a small torus; subsequently it became more complicated, inasmuch as the mouldings or shafts do not rest immediately on the common base of the pier, but spring, by means of a polygonal pedestal, from the irregular octagon beneath (Figs. 430 and 431).

§ 305. The capital in this style does not possess the same importance as is attached to it in Grecian and Roman architecture, and as serving merely as the medium of transition to the arched structure of the rib-vaulting it is of a more ornamental character.

The calyx, or bell shape, is generally chosen, but it is not that of the Corinthian capital, but more cylindrical. The capitals are of arbitrary and inorganic form, surrounded by one or two rows of disconnected leaves or flowers, which present the appearance of having been fastened on (Figs. 432, 433, 434, and 435), and have light moulded abaci above: they occur in the most varied forms.

In the clustered piers the chaplet of foliage does not pass entirely round, as the channels are only covered by the leaves of the capitals of the shafts in connection with them.

§ 306. The construction of the arches and ribs is essentially different from that of earlier styles. They constitute the new system of the groined vault. A broad intrados, or soffit, no longer appears as a main feature in the vaulting, but the moulding of fillets and hollows which occurs in the piers is continued in the arches, so that instead of the former broad surface, there appears a curved and pyriform profile (Figs. 436 and 437), which is simple in the cross-ribs, richer in the diagonal ribs, and most elaborate and varied in the arches that support the upper walls of the nave.

The central fillet is somewhat pointed and rendered more prominent by resting on a small projection, while the hollows are deeper than in the piers. The transverse arch consequently does not exhibit a massive undivided unity, as it does in the Later Romanesque style.

Fig. 436.

Fig. 437.



Profile of Rib-vaulting in Notre Dame at Paris.

but displays rather a rich and elastic development of individual mouldings.

The fillet in the transverse arches is important for the classification of style, as it gradually assumes a different shape in each successive century. In the twelfth and in the first half of the thirteenth it is simply cylindrical (Fig. 438, *a*). Towards the middle

Fig. 438.



Central Fillet of the Transverse Arch.

of the thirteenth century the profile of this moulding shows a sharp arris (*b*). In the fourteenth it assumes the shape (*c*, *d*) which also occurs in other principal mouldings. At the end of the fourteenth century the cylinder becomes lengthened into a point (*e*), and the cylindrical form is deviated from little by little, until at last it disappears entirely (*f*, *g*).

The degree of perfection in the building is chiefly to be determined by the profile of the arches. The arches and jambs of the doors and windows have also corresponding profiles; they are usually found to widen outwards from the opening (Fig. 439).

In the fourteenth century architects began to increase the number

of the diagonal ribs, and in this way to form stellated or reticulated patterns (Fig. 440), on which account these vaulted roofs have received the name of net-vaultings.

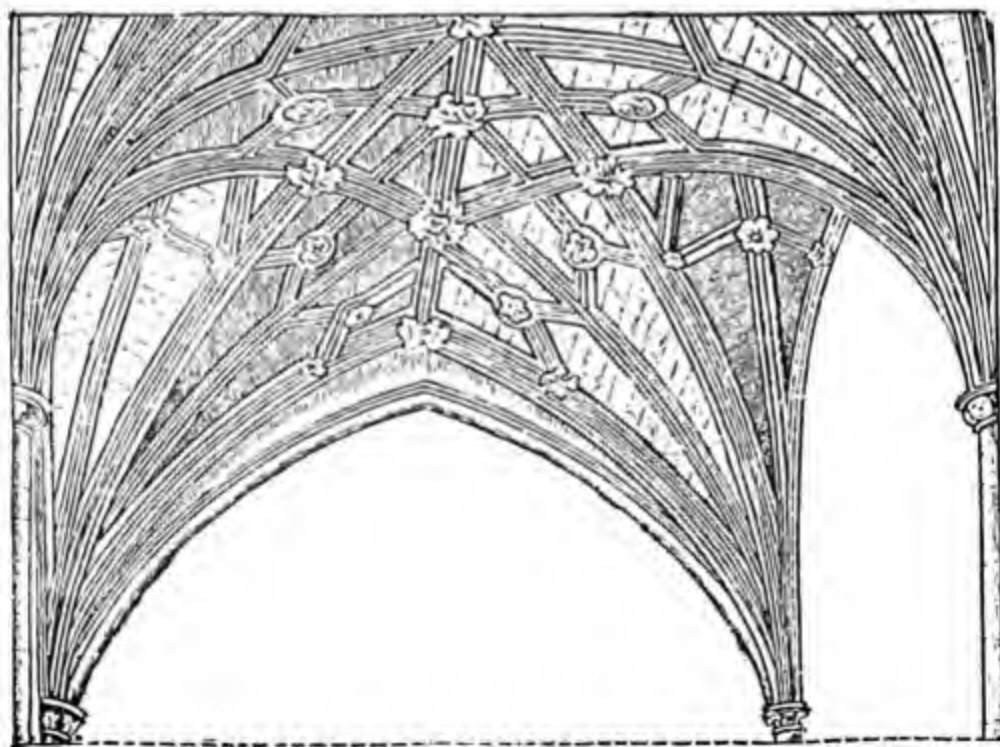
Fig. 439.

Moulding of the sides
of Windows.

At the point of intersection of the arches there is introduced either a circular moulding, or still more usually a key-stone, with a decoration in sculpture, or sometimes the sculpture only (Figs. 441 and 442).

§ 307. The buttresses (see Fig. 444) which are necessitated by the constructive requirements of the whole building (see section 300), appear externally as high masses of masonry rising in several perpendicular stages, one above the other, at those points to which the shafts which support the vaults are carried in the interior. The tops of these stages or stories, as well as of the buttress itself above the upper mouldings, are terminated

Fig. 440.



Net-vaulting in Winchester Cathedral.

either by gablets (Fig. 444), or by little towers with a pyramidal point, or sometimes by tabernacle work with detached statues

(Fig. 445). At the same time that these buttresses serve by their weight to augment the counter-pressure and resistance, they also add to the general effect produced by the entire structure.

The buttresses in the upper part of the nave are constructed in a similar way, but are less projecting. In order to give them the

Fig. 441.



Fig. 442.



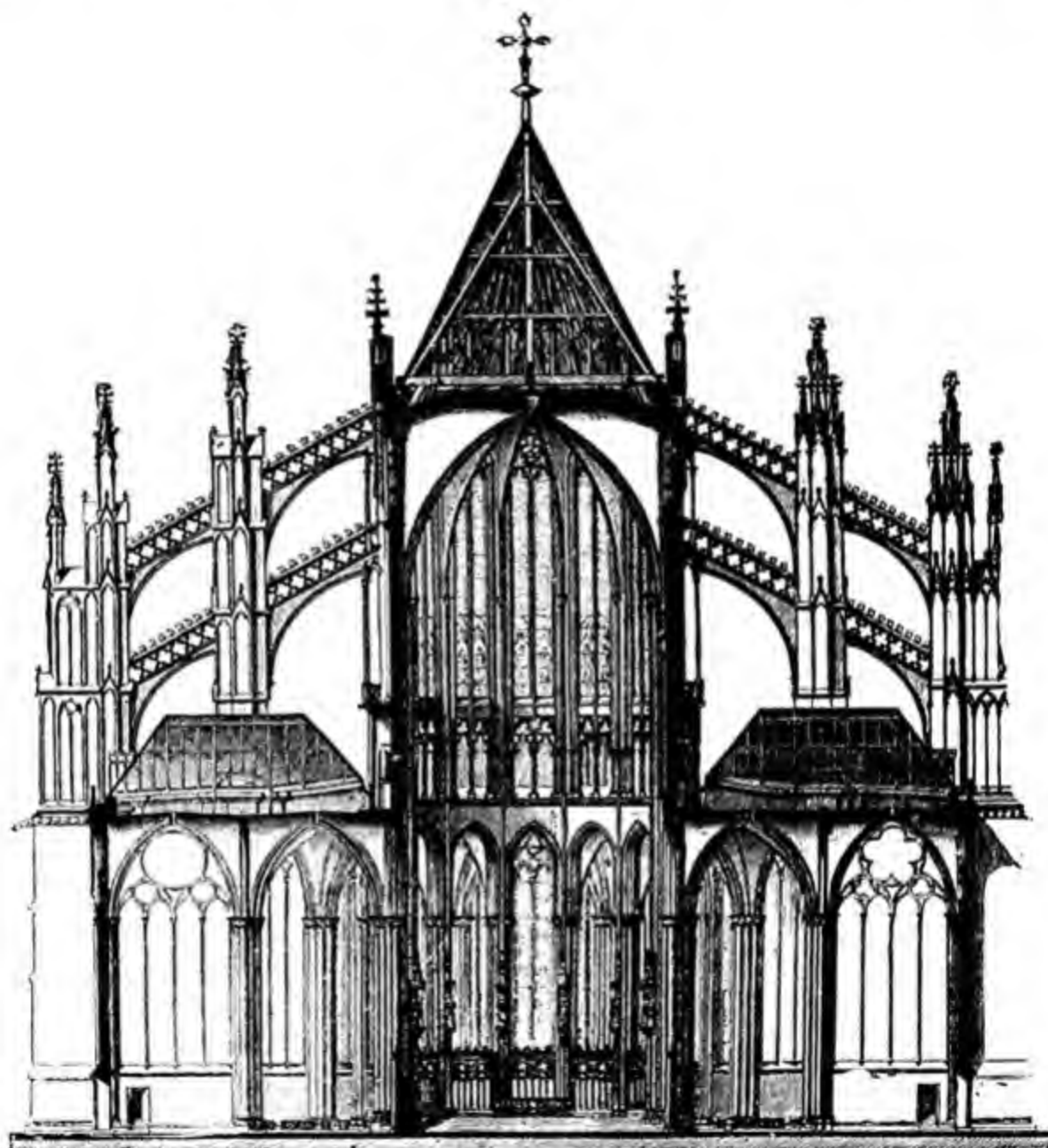
Bosses at Intersections of Vaults.

requisite power of resistance, the following very peculiar construction has been adopted. The buttresses of the aisles are raised to a considerable height above the roof of the side walls, and connected with the more elevated buttresses of the nave by means of flying buttresses (Fig. 446; see also Figs. 443 and 463). These flying buttresses, or arches, are moulded, like the transverse arches of the interior, and help to support the thrust of the nave vaults and to distribute the pressure to the stronger buttresses of the aisles. Without this arrangement the weaker buttresses of the nave would have to support the whole of the pressure. In order to increase the power of resistance massive masonry is introduced over the flying buttress itself.

§ 308. Since, however, instead of continuous mural surfaces, the clustered piers of the nave described in the foregoing paragraphs, and half the aisles with their buttresses form the real constructive framework, which has to support the weight of the vaulting as well as the roof of the building, the surfaces which occur between them are to be considered only as mural panellings, which are for the most part taken up with windows. As an instance of this may be cited the cathedral at Cologne (Figs. 447, 448, and 449), in which the roof of

the aisles is not only sloped forwards as well as sideways between each buttress, but also backwards, in order to enable the windows of

Fig. 443.



Section of Cologne Cathedral.

the nave to be carried downwards: whereas in other instances this roof is merely sloped towards the front, and the mural surfaces of the

Fig. 444.



Buttress in Cologne Cathedral.

nave which occur behind are interrupted by the triforium, that is to say, by the interposition of a gallery carried round the building in the thickness of the wall, and resting on small shafts with tracery above. The triforium had already occurred in Romanesque churches, though the manner of its construction had varied.

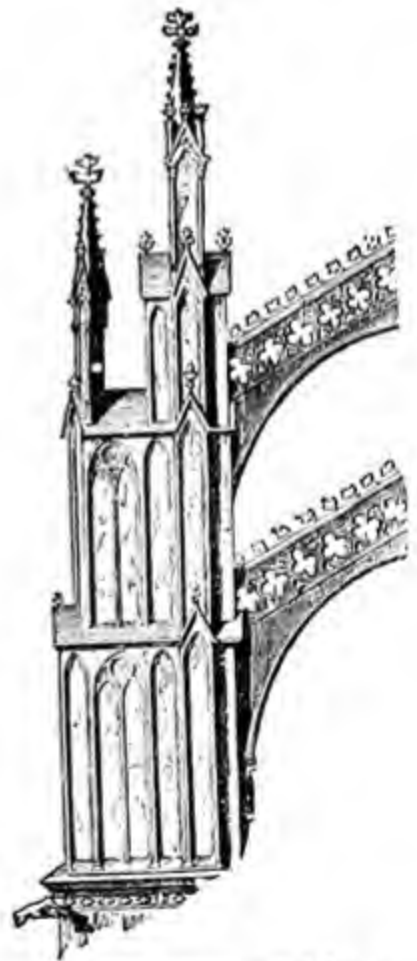
§ 309. As further characteristic features of the Pointed Style must be mentioned the portals, and especially the windows, in which the shape of the arches which cover them, and of the tracery of the window-spaces themselves, constitutes a

Fig. 446.

Fig. 445.



Tabernacle Finial to Buttress.



Flying Buttress in Cologne Cathedral.

distinctive indication of the degree of the development of the style and the shades of difference which distinguish the various periods.

The windows, which are for the most part lofty and broad, take up most of the space of the surface between the buttresses: they are divided by narrow perpendicular shafts or mullions, which at the

Fig. 447.



Part of the Section of the Nave
of Cologne Cathedral.

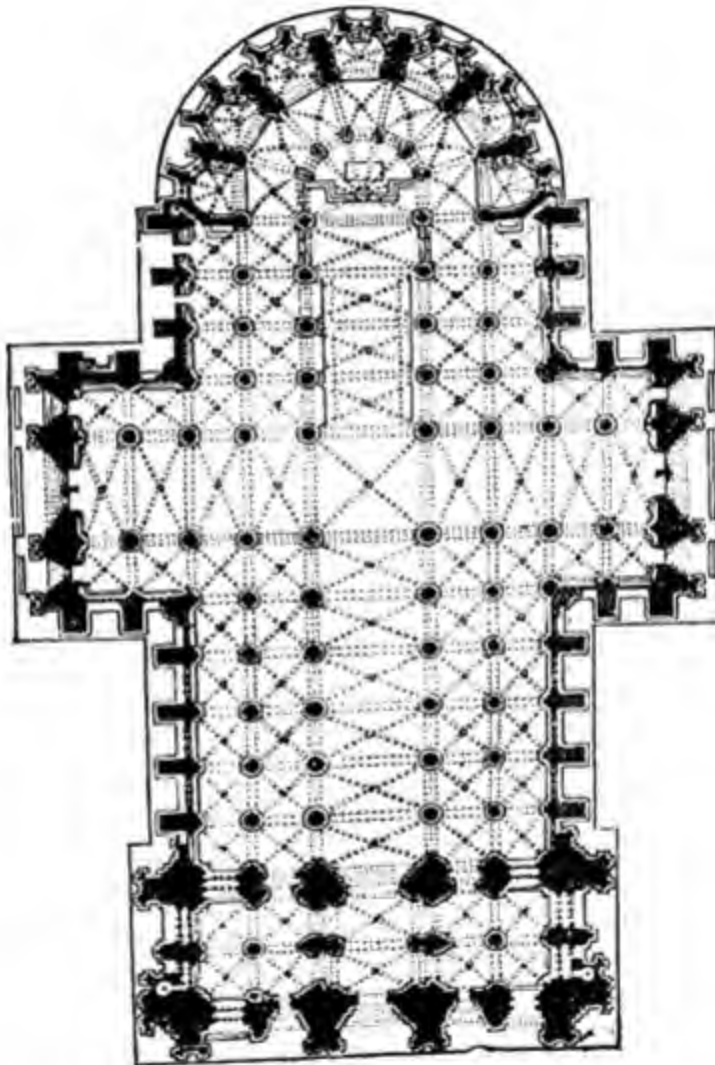
Fig. 448.



Part of the Nave of Cologne Cathedral
external view.

spring of the large external arch are connected with each other by pointed arches, whilst between the latter and the main arch are curved and twisted bars, which form very elegant tracery, in the shape of roses and other ornamental forms (Fig. 450). The tracery is so arranged that a circle is formed between two pointed arches, which is

Fig. 449.



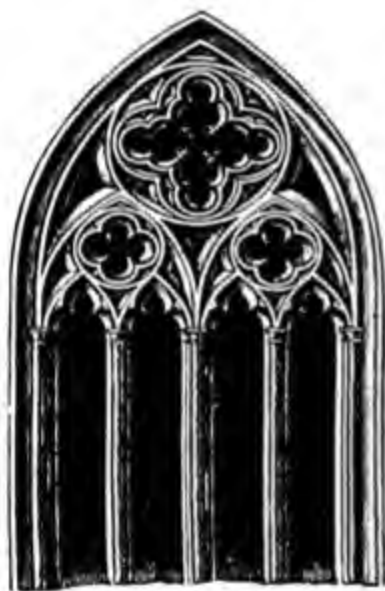
Ground-Plan of Cologne Cathedral.

enriched, as are also the pointed arches themselves, by smaller curves that touch one another and form a point. These figures, which occur as early as the transition style, are called trefoils or quatrefoils, or foils simply, according to the number of the circles (Figs. 451 and

452). In the pointed arches, as well as sometimes also in the openings between the same, there occur pointed figures formed by two segments of a circle, which are known under the name of cusps (Fig. 453). The principal mullions of the windows, from which arches spring that enclose smaller arches, have a moulding consisting of fillets and cavetti, but the smaller mullions which occur between are more slender, and their profile is simpler (Fig. 454). At a later period the mullions acquired a profile sharpened outwards by means of cavetti.

At first the tracery of the windows in the same row was formed

Fig. 450.



Window Tracery in Cologne Cathedral.

Fig. 451.



Fig. 452.



Trefoil and Quatrefoil.

Fig. 453.



Cusp.

Fig. 454.



Profile of Mullions in Halberstadt Cathedral.

uniformly, but subsequently a similarity is only to be found in the number of the mullions, whilst the tracery above is diverse.

§ 310. Other parts of the building are frequently constructed according to the same system as in the window tracery, as for instance the galleries, parapets, gables, &c. Similarly, although modified and adapted to the space, the mural surfaces are highly enriched with panel-like divisions formed by fillet-work, with sunken interspaces: this embellishment is of very frequent occurrence in the later period of the style. The roofs, moreover, whether vaulted or flat, are often

ornamented in the same way, and this mode of decoration is frequently extended even to small and subordinate features (Fig. 455).

In richly ornamented churches the triforia are embellished in the same way. These arcades are generally of the same depth as the wall of the nave, and open towards it, constituting passages round the building: though occasionally they are merely ornaments of the internal architecture without any passage being formed.

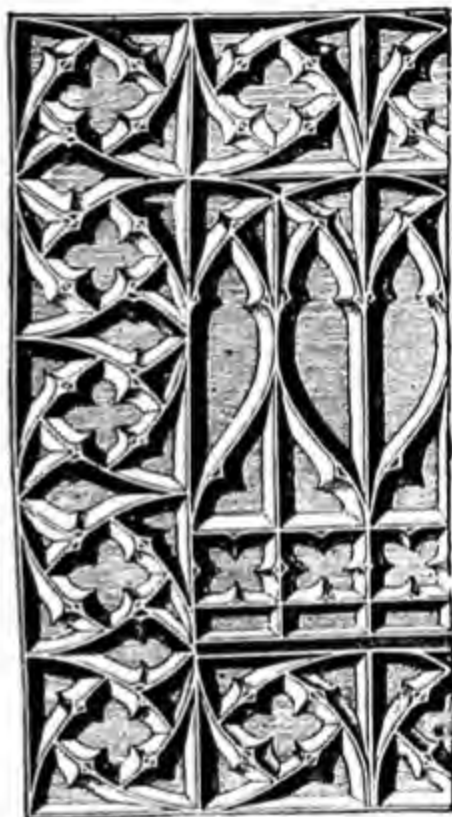
§ 311. The portals (Fig. 456) constitute the most important part of the external architecture. As in the Later Romanesque, they widen in a sloping direction outwards, but instead of the little shafts they have mouldings of slender fillets and cavetti, which are carried round in the pointed arch that covers them.

These portals are generally ornamented with statues of the saints or Biblical characters, which rest on pedestals. For this purpose the hollows are widened, so as to a certain extent to form niches, for which the fillets, which continue slender, remain as a framework.

Canopies are erected over the statues, which at the same time replace the capitals, and serve as supports for the small figures that are introduced above them. Both are repeated in several rows one above the other, even in the arches, where, in opposition to statical laws, they cease to occupy a vertical position, and meet at the point of the arches.

At a later period the opening of the doorway is generally divided by one shaft, on which the statue of the patron saint or of some important personage is suitably introduced. The space between the

Fig. 455.

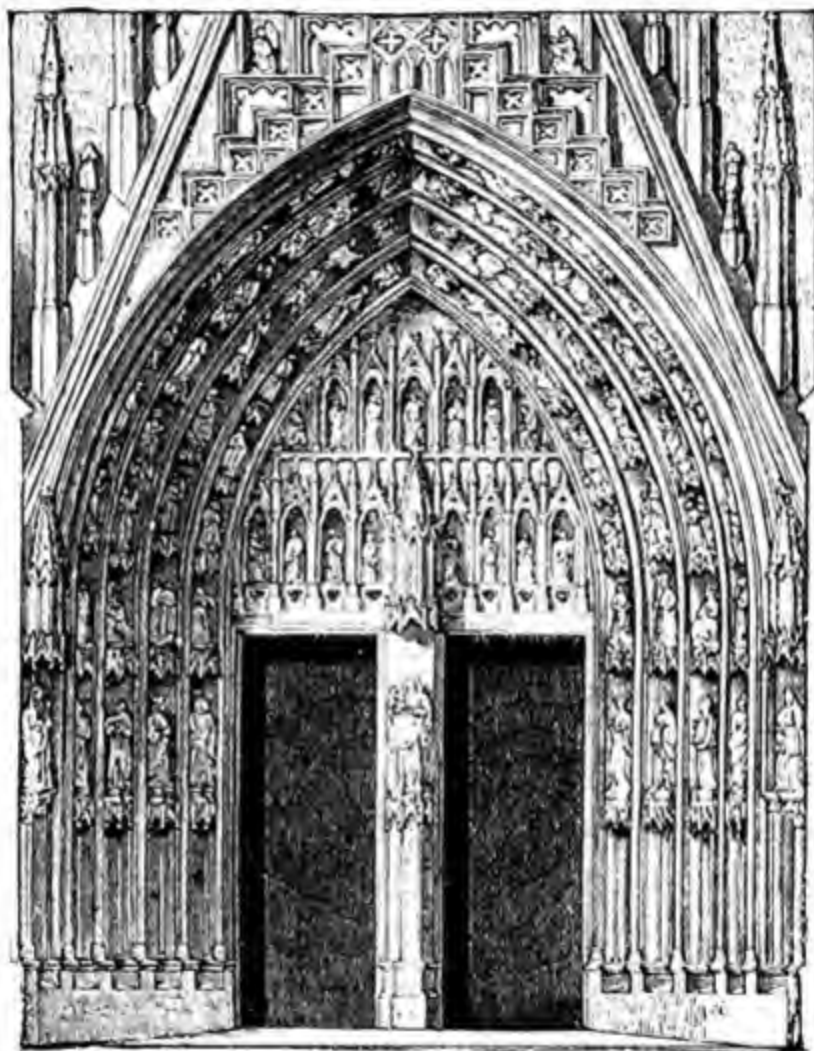


Half of a Door-Panel in the Convent
at Blaubeuron.

opening of the doorway and the arch is generally occupied by representations in relief in horizontal divisions.

The front façade has generally three portals, corresponding with

Fig. 456.



Main Entrance of Cologne Cathedral.

the nave and aisles: whilst an entrance door occurs on the sides of the building in front of the transept.

§ 312. The sloping, moulded framework of the windows and doorways is generally, at least in the best buildings, provided with a slender pointed gable, which serves to counteract the effect of the horizontal mouldings, and impart a soaring character to the composition (Fig. 457). The sides of the gables, both in the windows

and doors, as well as of the smaller gables on the buttresses (Fig. 458), are, inasmuch as æsthetic taste requires a counterpoise for the thrust and an harmonious rectangular termination for the slope, flanked on both sides by vertical tabernacle-shaped superstructures, called pinnacles, when they are not, as on the side façade, supported by the buttresses. The lower vertical part of the pinnacle is called the shaft, and the pyramidal part above the finial. In good architecture of this style these pinnacles always accompany gables. The space between these pinnacles and the arches of the windows is, however, not pierced, but ornamented in relief, resembling the tracery of the windows. In larger gables, as in those whose façades form crosses, or in the windows of towers, the masonry is treated in such a free manner that it forms a sort of trellis-work in front of the wall. Free tracery of this sort is also introduced in the other blank portions of the façades, so that the whole appears covered with a network of tracery. The consequence is that the lower parts retain their strength and simplicity, the upper their slenderness and grace.

The upper lines of the gables, especially of all the pyramidal parts of the exterior and of the tabernacle-shaped superstructures, both of those which embrace the gables of windows and towers, and those that occur on the buttresses, as well as those of the ribs of the pyramidal tower finials, are provided at regular intervals with detached sculptured flowers, or rather leaves, such as buds, bosses, and crockets (see Fig. 423), which in all gable-shaped and pyramidal terminations unite and form a finial in the shape of a foliated cross, resting on a vertical shaft (Fig. 459).

These leaves and flowers, during the flourish-

Fig. 457.



Oriel-Window in the Senate-House at Regensburg.

Fig. 458.



Gable on a Buttress in Cologne Cathedral.

ing period of the style, were indispensable æsthetical requirements for all gables without exception, whether they were small or little. Even independently of the ornamental enrichment obtained by their employment, they were calculated by their angular deviation from the obliquely ascending line to form an advantageous contrast with the same.

Fig. 459.

Gable-end with Crockets and Finial
in Cologne Cathedral.

Fig. 460.



Moulding Profiles.

§ 313. Whilst thus the buttresses in conjunction with their flying-buttresses, turrets, and pinnacles, and the pointed windows and doors between them with their framework and gables, may be considered as the main features as regards the construction and effect of the building, there is an appropriate and solid substructure and a lofty roof, which, with its soaring effect, is perfectly in harmony with the whole. This roof is divided from the perpendicular portions of the building by cornice-mouldings, which consist, like many other horizontal mouldings, of a projection sloped above generally at an angle of forty-five degrees, and having hollow mouldings beneath (Figs. 460, a, b, c, and Fig. 417, c.). These mouldings do not form a continuous horizontal termination, which would not be in accordance with the pyramidal direction of the other features, but are interrupted by the vertical portions, although they are con-

tinued round them. The hollows are generally terminated beneath by a fillet, and in the case of the moulded cornices by a narrow frieze ornamented with detached clusters of leaves.

Generally speaking, all the mouldings of the Pointed Style consist of convex members alternating with deep hollows, the two being blended by the help of smaller members, and powerful effects of light and shade are thereby produced.

§ 314. The soaring effect, which is so exclusively peculiar to the

Pointed Style, finds its highest expression in the cathedrals and churches. Towards this effect the façades and towers mainly contribute: the latter are either two in number, and form the ends of the west façade, or a single one is introduced in the centre of the same (Fig. 461). The contrast, moreover, with the quiet and unassuming exterior of the Later Romanesque churches is brought out prominently by the alternation of the more or less projecting buttresses and the receding and generally elaborately pierced windows and walls. The west façade is always marked by porches with gables, a central porch in the middle, with a porch at each side, as also by a magnificent window over the central porch, either pointed or rose (Fig. 462), as for instance in the Cathedral at Rheims (see Fig. 504), and with windows of smaller dimensions over the side-porches.

These rose windows

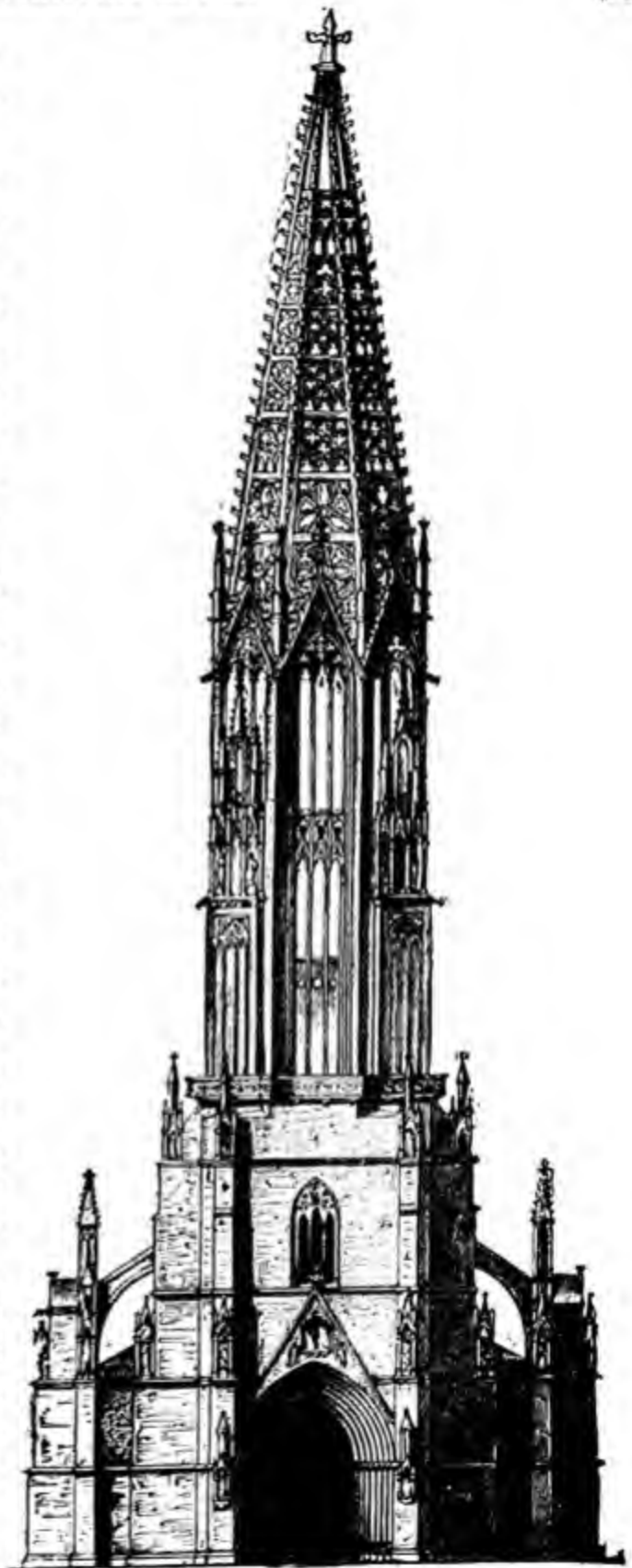
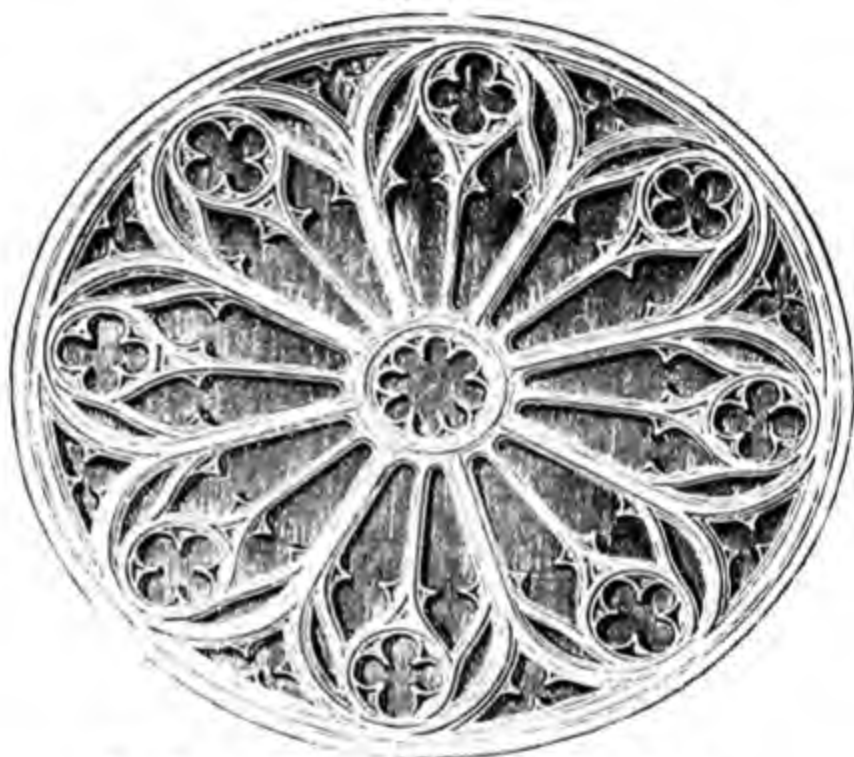


Fig. 461. Façade of Freiburg Cathedral,

constitute a rich adornment of the façade by the tracery which starts like rays from its centre. But still the most important feature in the west fronts are the towers which are organically connected with them, and which rise naturally in a pyramidal shape with square storeys, but with buttresses that recede gradually as the summit is approached. In the upper storey they assume, in

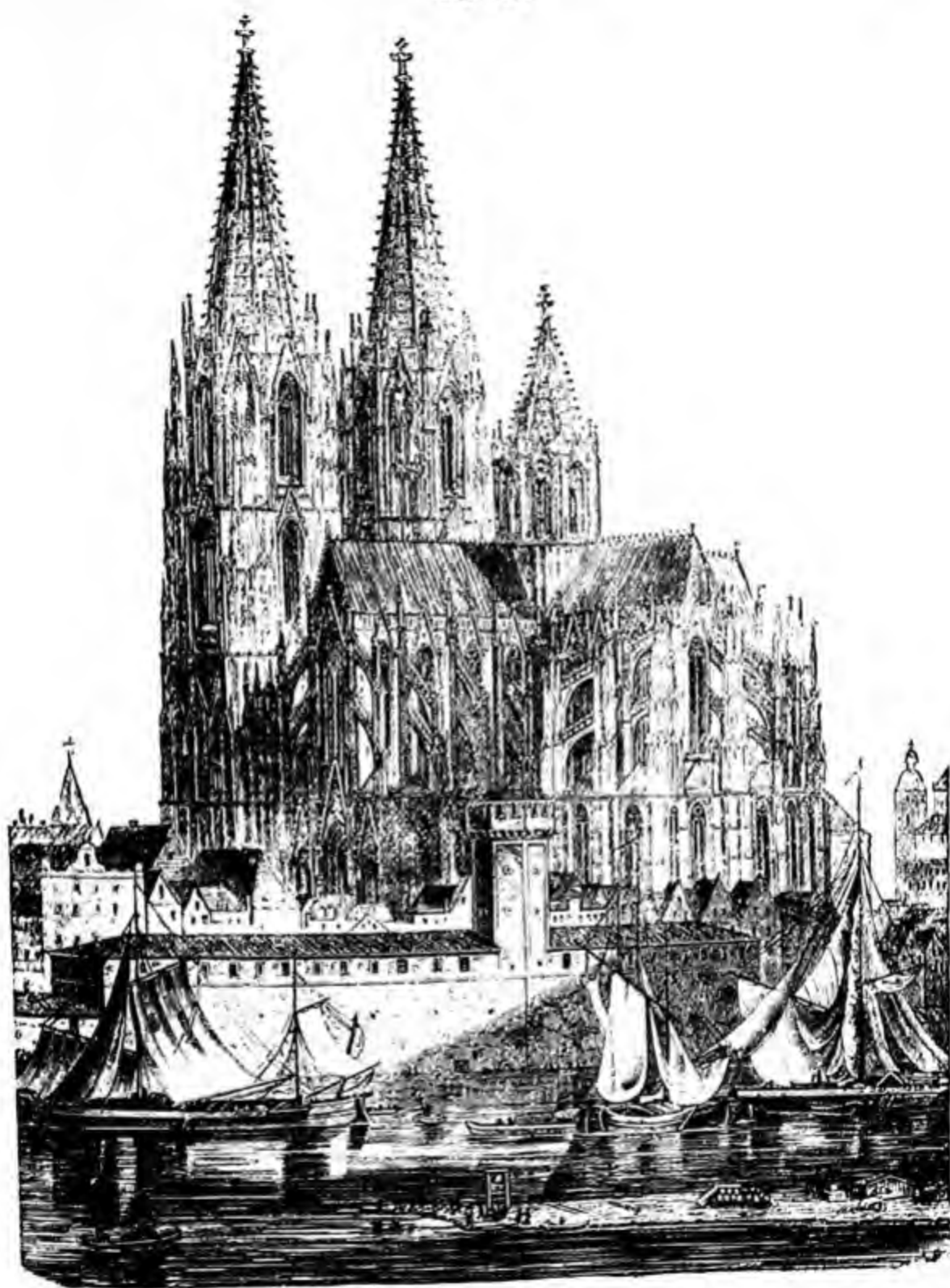
Fig. 462.



Rose Window in the Church of St. Croix at Orleans.

the best specimens of this style in Germany, an octagonal form, which first is continued upwards perpendicularly, and then terminates in a slender point or spire, whilst small turrets rise at the corners after the manner of the buttresses. Each part in itself, and all the parts in their entirety, give expression to the effort for aspiration, and the effect is heightened the more the towers and spires are produced upwards, so that the massiveness of the building seems lost in the light and airy superstructure. The spire, which consists only of perforated tracery, is strengthened by eight strong ribs, which, running up to the extreme point, unite and form an immense ornament in the shape of a cross. It is only in the case of a few build-

Fig. 463.



View of Cosmopolis Cathedral from the East End, after the proposed completion of its Towers.

ings that these proposed towers have been completed; but in their full perfection, through the boldness and elegance with which they soar into the upper regions of the air, they may be considered as the realization of the ideal. But the effect that is intended to be produced by the piercing of the spire is not entirely realized, because the piercings appear displaced, owing to the perspective, and consequently perplex the eye.

Since the upper part of the transepts on the north and south sides of the church rose up high and free above the lower dimensions of the aisles, there consequently ensued a peculiar formation of the façades of the transepts (Fig. 463). The flying-buttresses here display their entire breadth, instead of their back. The steep gable is flanked by turrets, or the buttresses in this position are, even from the ground, treated as such either of a circular or octagonal form.

The façades of the transept are, like the western façade, marked by portals. Over the point of intersection of the nave and transepts, a small tower, generally of an octagonal shape, is frequently introduced, sometimes known as the roof-tower. It is generally met with in the churches of the Mendicant Orders, which by their statutes were not allowed to have a tower. In England, on the contrary, a massive tower was introduced at this point of the building, whereas elsewhere, as a rule, such towers only occur in the western façade. When the west end has double towers, the church has generally five aisles.

§ 315. Finally it must be mentioned that a main feature of the Pointed Style in church buildings consists in the fact that the interior as well as the exterior appears organically instinct with life, and that the exterior must always be regarded as the expression of the interior, although it possesses a certain independent idea and development of its own. On the other hand, owing to this very independence and fulness of the details which to some extent are ornamental, but at the same time constitute to a certain degree the framework of the building, such as turrets and flying-buttresses, a disturbance seems to ensue, which, when contrasted with the harmonious repose and uniformity of classical buildings, or with the simplicity of the Later Romanesque, produces an impression of complication and superfluity.

If, moreover, the perishable nature, and therefore unsuitableness,

of all these ornamental parts be taken into consideration, parts which often fell into decay before the whole building was completed, it is a subject of astonishment that in this practical age this style is advocated by so many persons as being in accordance with the requirements of our times. It can, however, with justice be alleged that the style seeks to realize ideal conceptions, although at an enormous expenditure of means, which do not satisfy material claims; whilst, on the other hand, the parts that appear the most perishable, and apparently useless, are still indispensable in an æsthetic point of view, without which the whole architecture of a Gothic building would convey an impression of tastelessness.

Speaking in general terms, the exterior of buildings in this style lays more claim to the merit of picturesque grouping than to strict monumental and architectural efficacy; whilst incontestably the interior of the various cathedrals conveys the most sublime impression which the architecture of any time and any country has been able to produce.

§ 316. In the ornamentation by means of plastic decorations of the individual parts which have been described a certain moderation is throughout perceptible. The constructive parts are in themselves already so animated and significant, that they could dispense with any ornamentation in addition to the beauty already existant in their own organism. Each ornament that is met with is suited to the position in which it occurs. Human forms in high relief are introduced as statues on the corbels, or as angels on the brackets, or simple heads are employed as finials. The human figure occurs mainly in the porches, of which it forms the principal embellishment, as also in the tabernacle-shaped niches of the buttresses, generally in conjunction with a baldachino-like superstructure. In French churches it occurs also in the galleries. Animal figures are rare in interiors, and are introduced in a similar manner in corbels and brackets. Externally they are frequently employed as spouts for the gutters; they assume the most fantastic shapes, and project a long way from the corners or in front of the pillars, and discharge the rain-water from their jaws (Figs. 464 and 465).

Besides the foliage introduced in the gables, the capitals and the hollows of the mouldings, as also the friezes beneath, are embellished

with vegetable ornamentation, which assumes the form of detached leaves or flowers, which appear fastened on, or lightly attached (Fig. 466 ; see also Figs. 420, 421, 422).

The line patterns of tracery, which are constructed in accordance with geometrical laws, are most extensively applied to windows, to

Fig. 464.



Fig. 465.



Animal Heads as Gutter Spouts in Cologne Cathedral.

Fig. 466.



Ornamented Moulding (Late English) in Wells Cathedral.

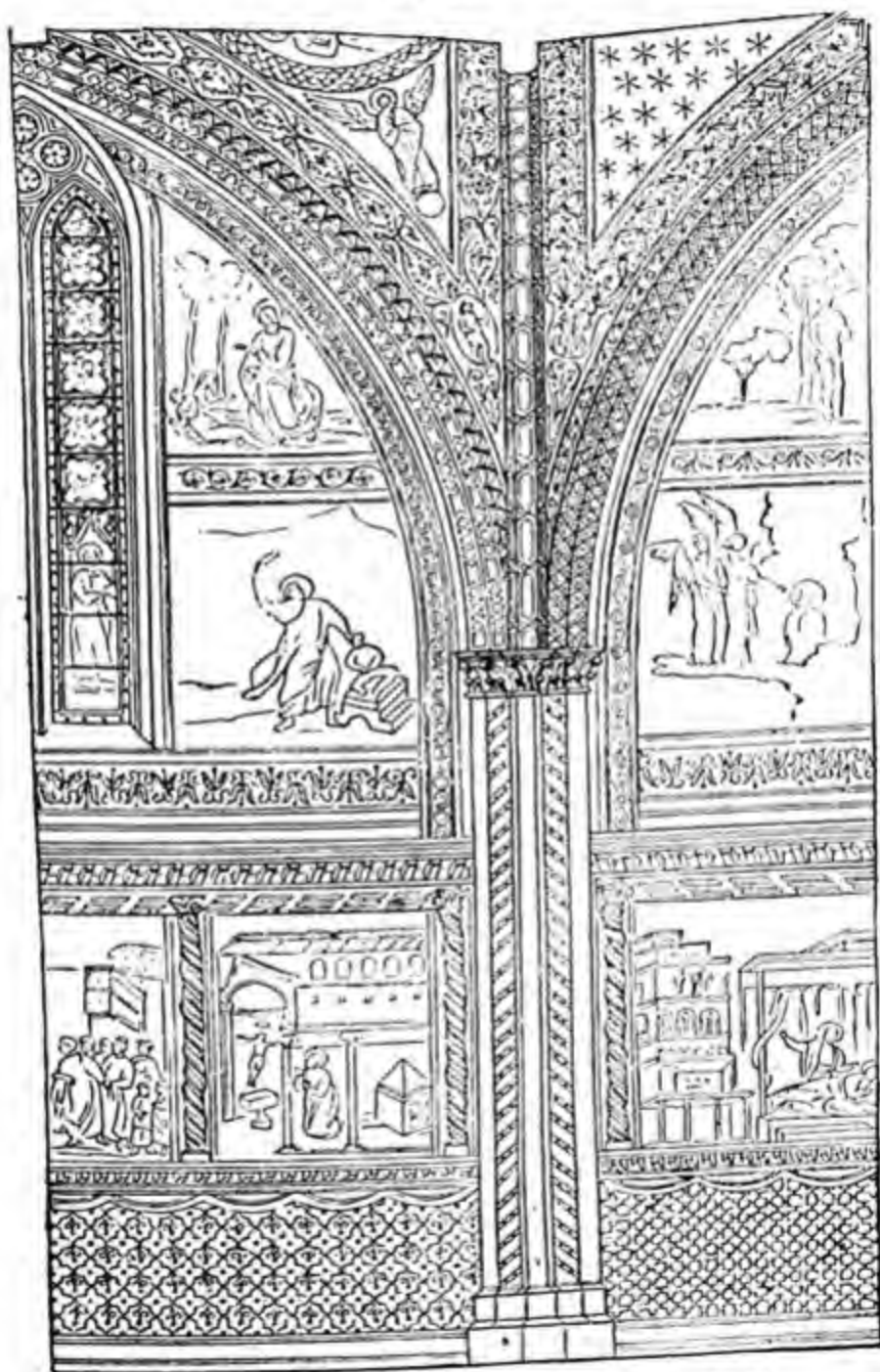
the arcades of galleries, to parapets, and to mural surfaces, where they partly correspond to the really pierced tracery, or only form a panelling as ornament ; whilst sometimes they stand out from the wall in high relief.

§ 317. Besides plastic ornamentation, colouring was introduced, although not frequently, in the same way as it had been in the Later Romanesque churches. In the mouldings this colouring serves to enrich and increase their effect, inasmuch as the individual parts received heavy tints, which were symmetrically repeated either simply or in a pattern, whilst the more prominent parts were frequently gilded. Figures were also introduced on the mural surfaces, and known by the name of frescoes ; they were separated and as it were framed in panels by means of richly coloured borders.

The surfaces of the vaults either have representations of figures

in accordance with the walls; or, which is more usual, they are ornamented with gold stars on a dark-blue ground, with arabesque borders of various colours.

Fig. 467.



Decorations in the Church of San Francesco at Assisi.

This coloured ornamentation is especially peculiar to Italian churches in the Pointed style, and occurs but rarely in other countries (Fig. 467).

§ 318. Coloured windows constitute an especially effective ornamental feature in the churches built during the prevalence of the Pointed style; though they were already in use in Later Romanesque buildings. In the thirteenth century, as in the Later Romanesque period, they generally assumed the character of mosaic-work, inasmuch as they consisted of a large number of little pieces of glass fastened together with strips of lead, and arranged so that no particular colour is strikingly predominant. They represent figures on a rich ground of lozenge-shaped and other patterns with intertwining foliage. In other windows the lights are filled with single figures of saints or biblical characters, either the size of life or on a colossal scale. The borders still have, as previously, pearl-beadings, as well as other ornaments. The whole arrangement and distribution of the colours is managed so skilfully that no confusion occurs, in spite of the great quantity of pieces of which the whole is composed. In historical and biblical subjects the figures are nearly all kept on an even ground as in bas-reliefs, and their colouring is as rich as that in the ground-work; consequently a unison is produced, which is one of the main advantages of these windows.

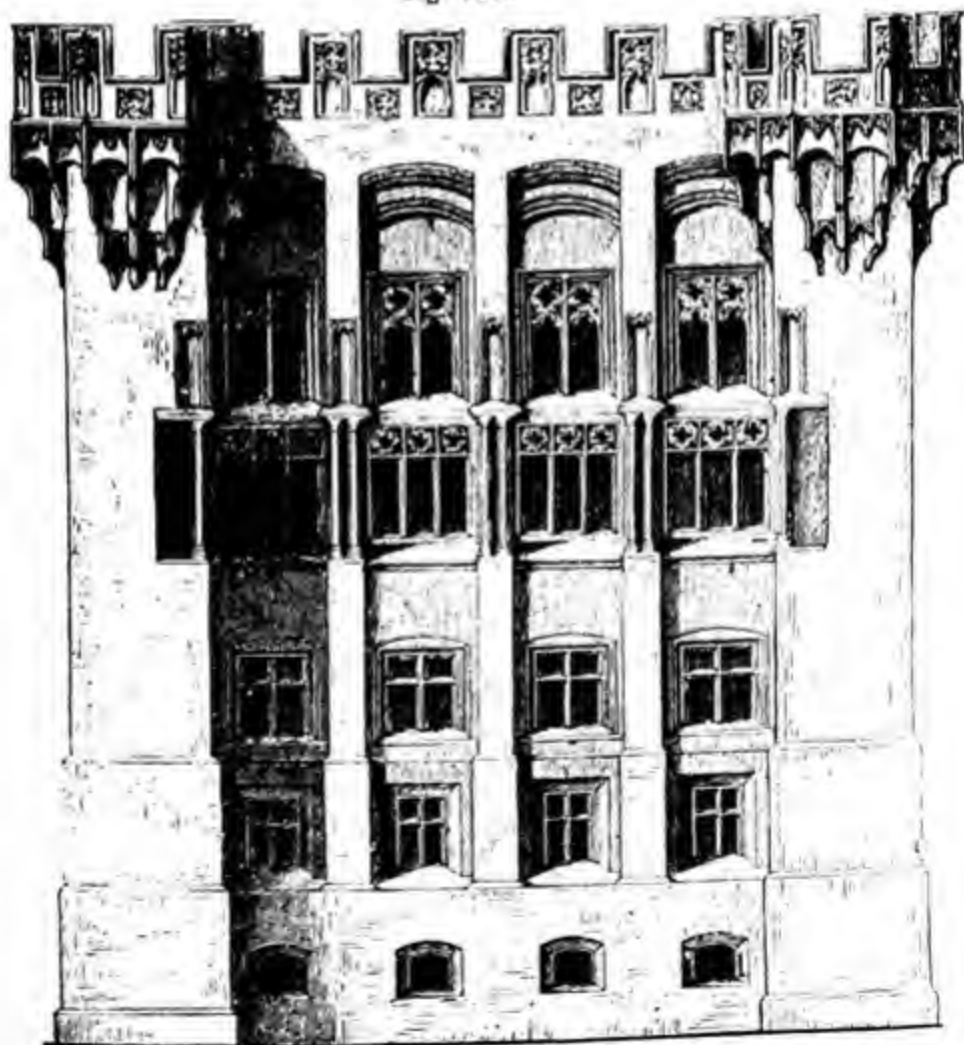
The later specimens of painted glass windows, that is to say of the fourteenth century, no longer exhibit a Romanesque influence; the execution is better and the drawing more correct; a closer imitation of nature is perceptible, shading and the principles of chiaroscuro are attended to both in the figures and draperies, whereas previously this effect had merely been produced by hatching. The medallion-like groups of figures, as well as the mosaic-like grounds, are quite abandoned, whilst large figures of the saints and other personages are introduced under gabled canopies. The back-grounds are monochrome, the pieces of glass of larger dimensions than hitherto, and architectural details are freely introduced. On the whole, the windows are less harmonious than those of the preceding period.

The painted windows of the fifteenth century are distinguished from those of the fourteenth mainly by the drawing of the figures, which more nearly approaches nature, as well as by the style of the

architectural features which are introduced, which corresponds with the character of architecture itself at the latter period. Borders are less frequently employed, and consist of narrow foliage painted on long strips of glass. The ground is of one colour, as in the preceding period. Although the compositions, when considered in the abstract, often possess considerable merit, still, as an architectural decoration, they only produce a moderate effect, owing to the confusion of the subjects and the want of harmony in the blending of the colours.

§ 319. The development of the Pointed style in church buildings, and by means of the same, took place in accordance with the principles which have been described above; but all other public

Fig. 468.



Façade of the Knight's-hall in the Castle of Marienburg, in Prussia.

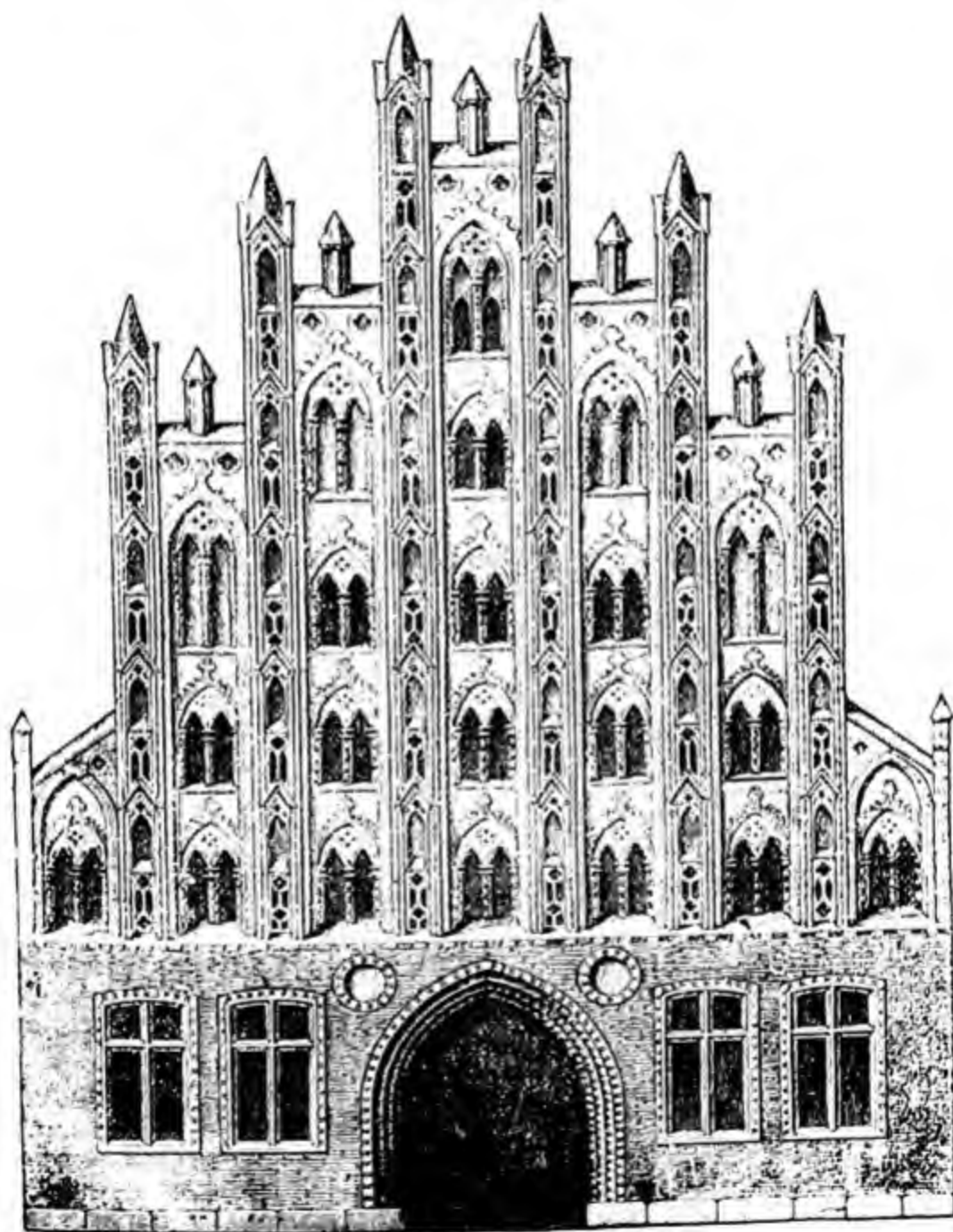
buildings, as well as dwelling-houses, in this style were executed during this period with great splendour. Naturally many modifications of the system employed for churches took place in buildings of a different nature: thus, for instance, that soaring character which marks the sacred edifices would have been out of place in other structures the purposes of which were so entirely different, and where it was not intended to evoke any religious sentiment. Consequently the above-mentioned characteristic features which prevailed in churches, and the forms which were necessitated by the same, do not occur in other buildings—such as the universal application of the pointed arch as a covering to the apertures and spaces of the interior, and the system of transverse-arches with the buttresses it necessitated. The whole treatment of the building, however, assumed a more arbitrary and decorative character, for, with the exception of some individual main elements, it is in the ornamentation of a style that buildings principally find the expression of their characteristic features. The profile of the mouldings, however, invariably retained the same independent stamp as in the sacred buildings; but, on the other hand, the horizontal line occurs more decidedly and more prominently (Fig. 468).

§ 320. The soaring character of church architecture finds, however, an occasional expression in the façades of the dwelling-houses. Since the narrow side of the houses is turned towards the street, they are constructed with a high, pointed gable, which does not, however, rise in an oblique line, but is carried up in steps in the manner that is peculiar to the architecture of the Middle Ages, as also to Romanesque houses. These steps hide the slanting roof-lines which lie behind them, so that a gable of this description, when viewed from the side, appears like an independent structure. The windows in the various storeys are divided by small columns, which support smaller arches spanned by larger ones; or when they are covered horizontally, they are united in groups, which diminish in size and number towards the top. This soaring tendency is, however, more clearly perceptible in those façades of dwelling-houses which consist only of perpendicular, continuous piers, between which the windows appear like panellings (Fig. 469), or in such façades as consist of narrow, moulded bands, which, rising upwards between the windows, are con-

nected with the pointed arches above them, and run up to the gables as pinnacles.

The more ornamental class of houses borrowed much from the

Fig. 469.



House at Greifswald.

churches and castles, such as turrets and balconies with battlements and tracery. The variety of the materials employed in the construction of the building, whether it was of stone or brick, also exercised an influence. In districts where wood was abundant, a peculiar style of architecture arose, in which houses were constructed in framed-work, and adorned externally with elegant carvings; while the storeys project one above the other on beams shaped like corbels, and the ends of the beams, as well as the spaces between them, are

Fig. 470.*

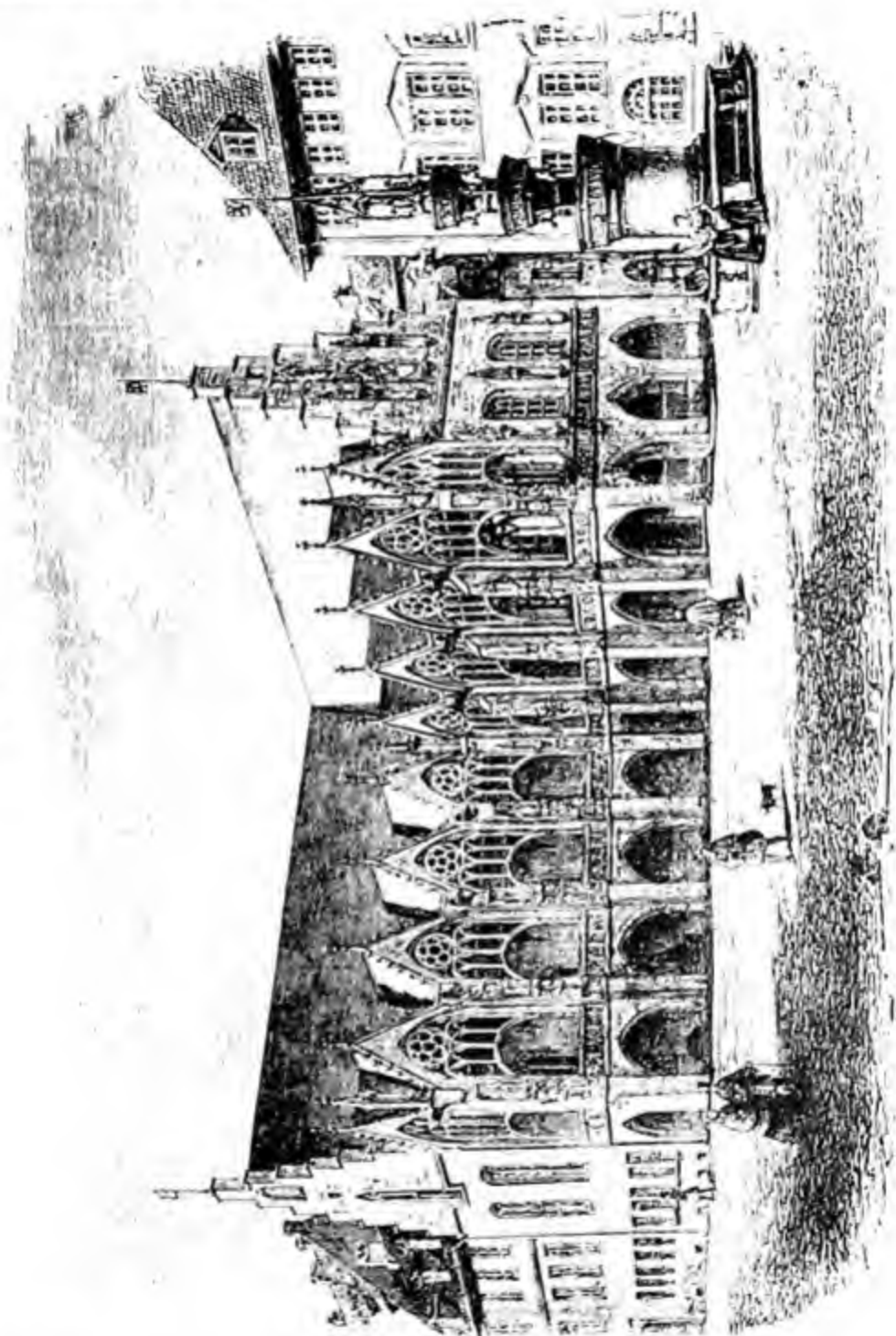


The Castle of Rheinstein.

* This castle, it is true, belongs to the modern period, but still the imitation offers a good illustration of the castles of the Middle Ages, of which it is an exact copy.

richly adorned with carved enrichments; in some instances with representations of men and animals.

Fig. 471.



View of the Town-Hall at Brunswick.

§ 321. The designs of the castles and of the monasteries, with

their cloisters, are in the main similar to those of the Later Romanesque style, but the individual details belong to the Pointed style, inasmuch as the forms described in the foregoing paragraphs were applied in their construction. The chapter-houses and refectories which were attached to the monasteries display, at a later period, a rich

Fig. 472



The Schoener Brunnen at Nuremberg.

and peculiar method of vaulting. This vaulting rests on piers or pillars in such a way that four different vaults spring from each pillar and the rib-vaultings thus assume a shape resembling a palm or fan.

Amongst all civil buildings, Town-Halls are those that display the greatest richness of architecture, and in this respect they stand next to the churches. This is especially the case with those built in the latter part of the period, and the same remark holds good for Market-Halls and city gates. One of the most interesting buildings of this class and one that produces a highly picturesque effect, is the Town-Hall

at Brunswick (Fig. 471), which was built partly during the second half of the thirteenth century, and partly—that is to say, the external galleries—at the end of the fourteenth and at the middle of the fifteenth.

The ornamentation of the Pointed style was also exemplified in the various richly-wrought objects which were erected or placed in the churches, such as tabernacle-work, pulpits, rood-screens, &c., and also by structures independent of the churches, such as monuments, fountains, &c. Fig. 472 shows an example of the latter class of erection.

§ 322. Now that all the universal principles of the Pointed style have been detailed, it remains to mention the various modifications and peculiarities which marked the degrees of its development in different periods and countries.

In every quarter where the Pointed style attained perfection, shades of distinction in style are noticeable at intervals of from twenty-five to thirty years. The following subdivisions of the style can be uniformly arrived at: the early or severe style; secondly, the developed, harmonious, noble style; and thirdly, the late, decaying, or vitiated style. In these distinctions mere richness or simplicity must not be regarded as an exclusive attribute of a particular period, for simple structures occur both in the second period of the style, owing to strict simplicity being necessitated by the material employed, or by want of money, and also in the latter period, when their plainness and want of ornamentation display a marked contrast to the usual attributes of the period.

The following division into periods may be accepted:—

1. The Arab-Norman Pointed style, which was first employed with æsthetic effect by the Arabs in Sicily and Lower Italy, and afterwards accepted by the Normans, who adopted it without further development in those countries when they passed under their sway. This style has already been discussed; it belongs to the tenth and eleventh centuries.

2. The Transition style: partaking at the same time both of the Later Romanesque and the Pointed, for it includes both the end of the former and the beginning of the latter. This has already been treated of under the head of the Later Romanesque styles. Its appearance and duration vary according to the different countries; but, generally speaking, it may be said to have prevailed during the twelfth century and at the beginning of the thirteenth.

3. The Early Pointed style: that is to say, the style in which the

Pointed arch first appeared as the essentially characteristic and predominant element both for the exterior and the interior. This early Pointed style is simple and severe in its proportions, and in its details exhibits some traces of the heaviness of the Later Romanesque style, which preceded it.

The windows have generally long, narrow proportions; their tracery is composed of circles with fillets, and the small foiled cusps under the main arch of the window were of rare occurrence, see Fig. 474; these, however, subsequently became universal (Fig. 473).

The piers generally consist of a circular nucleus, with which are connected three-quarter columns as supports of the transverse-arches.

Fig. 474.



Tracery of Window in Cologne Cathedral.

Fig. 475.



Tracery in Christ Church Cathedral, Oxford.

Fig. 473.



Early Tracery without Cusps, in the Pointed Arch.

In simple churches, especially in England, a plain octagonal or circular pier is the prevalent form. The period of its duration was, approximately speaking, from the end of the twelfth to the end of the fourteenth century.

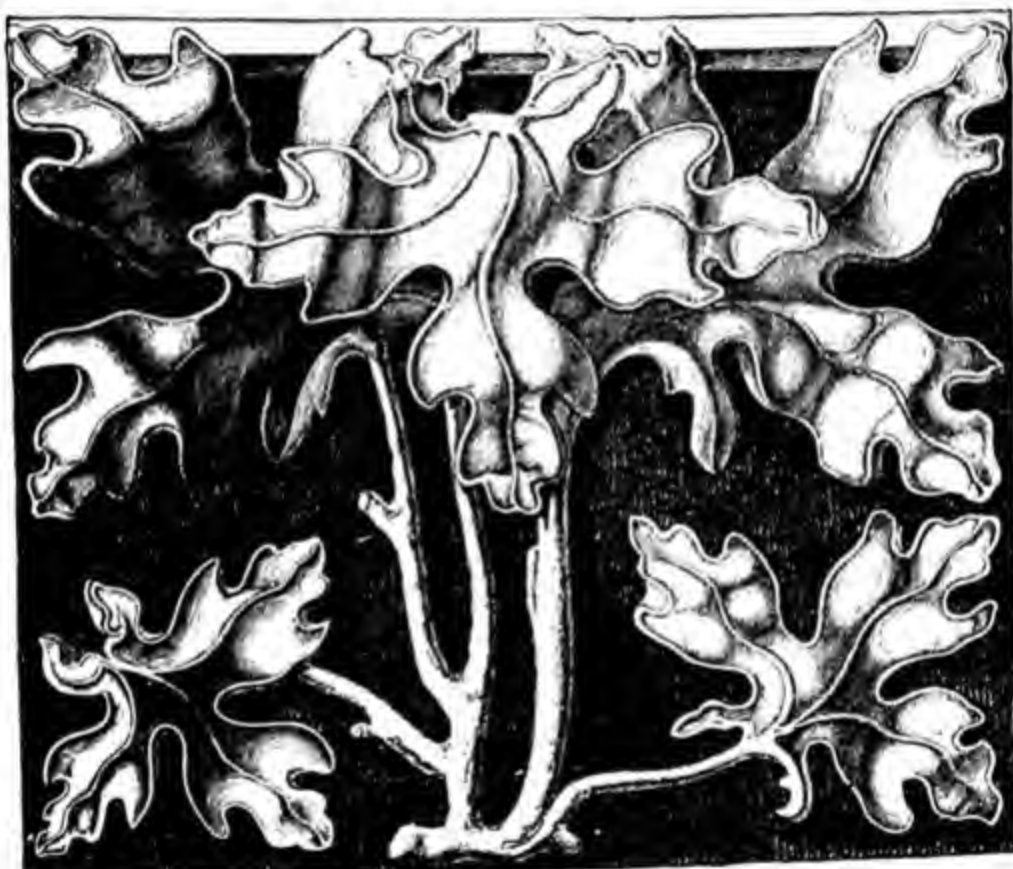
4. The Middle or perfect Pointed style, known in England by the name of Decorated. This exhibits the most complete stage of development in Pointed architecture, combined with elegance and richness of form. Its most distinguishing feature is the tracery of

the windows, the patterns of which consisted at first of geometrical figures, such as circles and trefoils (Fig. 474), but subsequently became more complicated, with undulating and intersecting lines (Fig. 475).

The difference of the style is also clearly marked from the foregoing by a freer application of ornament, as well as by its nature and treatment (Fig. 476).

During the later period of this style the ogee-shape already occurs in the outline of the arch, although this form properly belongs to

Fig. 476.



Specimen of Foliage in Gothic Ornamentation in Cologne Cathedral.

the decadence of the style. The same is the case with those reticulated vaultings, in which the ribs of the intersecting vaults compose a more or less combined system, which forms a kind of network (see Fig. 440).

The normal shape of the piers of the nave in ornate churches, whether they consist of clustered pillars, or whether they are moulded,

is diamond-shaped (see Figs. 428 and 429), though in plainer buildings they are often circular or octagonal.

The duration of this phase of the Pointed style was from about the end of the thirteenth to the end of the fourteenth century.

F'g. 478.



Tracery of the Flamboyant Style, in the Church of St. Ouen, at Rouen.

Fig. 477.



Ogee-shaped Setting of the Pointed Arch, in the Church of St. Andrew at Walpole.

Fig. 479.



Tracery of the Perpendicular Style, in St. Michael's, Oxford.

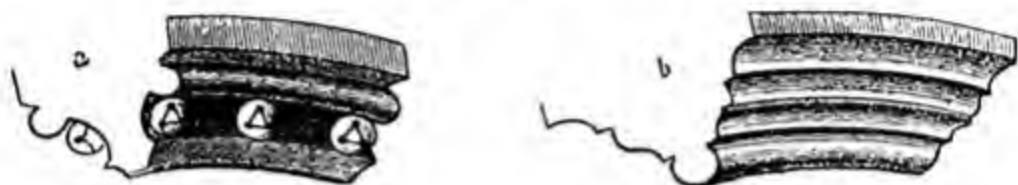
5. The Late, or degenerate style, which is constituted contemporaneously by the English Perpendicular style, and the Flamboyant style of the Continent. These names arise from the tracery, for in the Flamboyant the pattern assumes the appearance of flames (Fig. 478), and in the Perpendicular a strictly vertical formation (Fig. 479). This alteration in the tracery is the most striking peculiarity of this style; and the system followed in the windows is also applied to wall-panelings.

This deteriorated style lasted from the end of the fourteenth to the middle of the sixteenth century.

§ 323a. The Perpendicular style, which is also known as the Tudor style. The mouldings and ornaments of this style, although they have much in common with those of the Decorated, are not to be compared with the best of the latter, even in the relatively flourishing period. Owing to gradual deterioration, the mouldings became

poor and stiff (Fig. 480, *a*, *b*), the embellishments excessive, and often roughly executed; the arches, which at first were described from two points, but which subsequently four-centred, were for the most part depressed (see Figs. 414, 415, and 416).

Fig. 480.



Profiles of Vaulting-Ribs in the Perpendicular Style.
a. In Gloucester Cathedral. *b.* In the Divinity-School, Oxford.

One characteristic feature by which the Perpendicular style is marked is the square arrangement of the hood-mouldings (Figs. 481 and 482) over the porches and windows, instead of being triangular

Fig. 481.



Porch of Fotheringay Church.

Fig. 482.



Quadrangular Window-Setting.

Fig. 483.



Quatrefoils in horizontal divisions.

or gable-shaped, as formerly: by this arrangement a panel was formed on each side over the arch decorated with tracery, foliage, or shields.

A further peculiarity of this style consists in the horizontal features intersecting the vertical ones: these are frequently repeated several times in large windows, where rows of quatrefoils are more often introduced than in the previous styles (Fig. 483). These bands intersect the panelling which is so freely introduced both externally and internally, as well as the vertical lines, and they thus cause a rectangular arrangement, which also extends through the subordinate parts, and gives an appearance of stiffness to buildings constructed in the Perpendicular style. A detached vertical ornament, as shown in

Fig. 484.



Roof-Ridge Ornament.

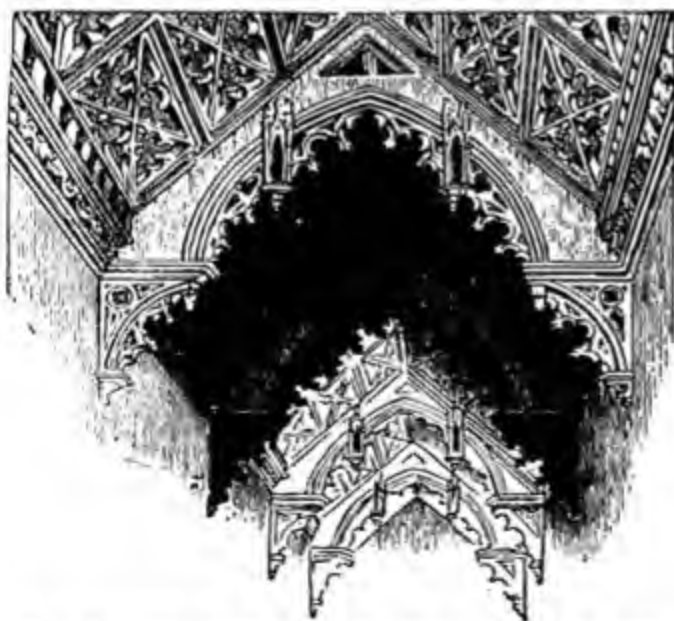
Fig. 485.



Hollow with Ball-Flowers.

Fig. 484, is also common in this style, and is employed as a finial to the cornice and roof-ridges. Instead of the foliage and rosettes employed in the embellishment of the hollows of the earlier sub-

Fig. 486.



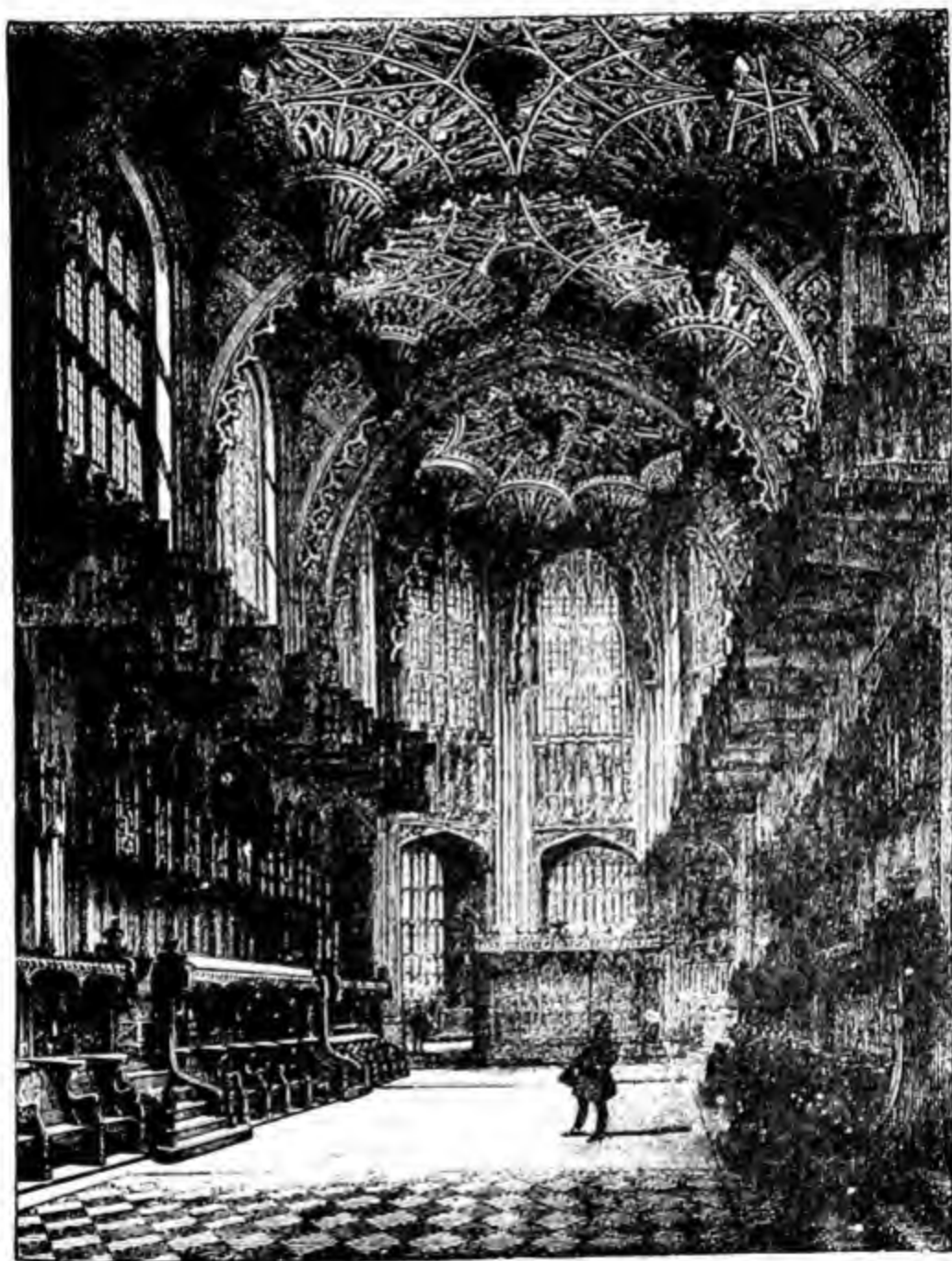
Roof-Supports at Gifford Hall left exposed to the view.

Fig. 487.

Dependent Ornament in
Christ Church Hall,
Oxford.

divisions of the Pointed style, ball-shaped flowers, as shown in Fig. 485, or square-shaped, as shown in Fig. 477, were introduced. In fact the ornamentation generally became stiff and heavy, and differed

Fig. 488.

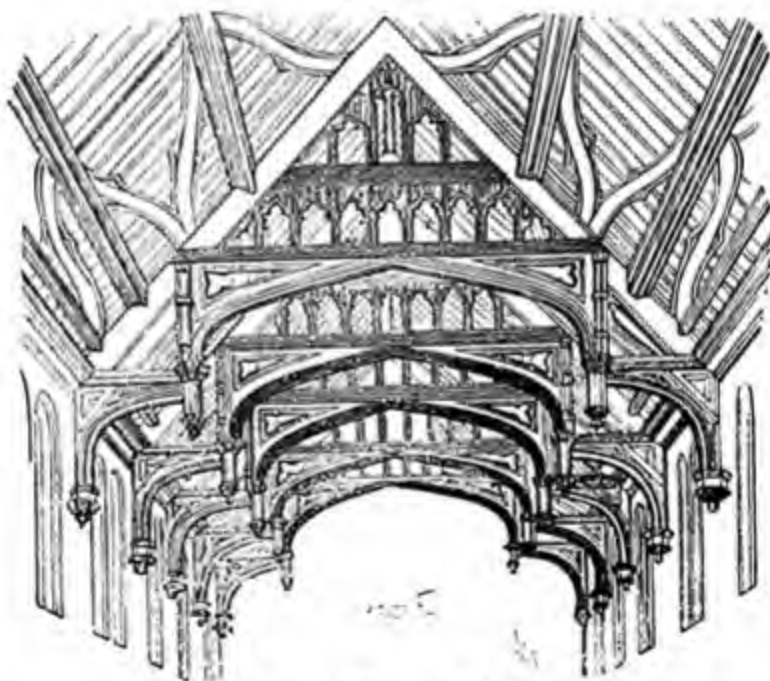


Henry the Seventh's Chapel in Westminster Abbey.

entirely from the forms of the preceding. Pointed style, which were, without exception, drawn from nature.

§ 324. Besides the roofs which occurred in the preceding periods, fan-shaped roofs, ornamented with panellings, and with dependent pendants resembling stalactites, are also peculiar to the Perpendicular style (Fig. 488). Richly decorated roof-trusses, which are left clearly visible, are also of frequent occurrence; of these, Fig. 486 serves as an example. In these roofs the spaces between the highly ornamented and moulded beams is filled with rich tracery, whilst the intersections and junctions of the woodwork are enriched with dependent carving (Fig. 487) and representations of foliage and figures. Westminster Hall is an instance of this description of roof. The roofs, when they are plain, are sometimes overlaid with boarding, and divided by ribs and panels (Fig. 489). It is indis-

Fig. 489.



Hall in Eltham Palace.

putably the case that this mode of roofing, which leaves the roof-construction visible, is often so roughly executed in small country churches, that it seems more fitted for a barn than for a building intended to call forth feelings of a sublime and reverential nature:

but even at the present day this method of roofing is a favourite one for small churches in England.

§ 325*b*. The Flamboyant style. This does not form a distinct style in the same degree as the English Perpendicular does, but is rather to be considered as a variety of the decorated style at the period of its deterioration. Some characteristic features are, however, peculiar to it. It no longer displays the purity and boldness of the buildings of the Early Pointed period, but on the other hand exhibits an intricate excess of ornamentation.

In churches of this period the aisles often have roofs continuous with that of the nave, to the disadvantage of their exterior appearance.

One of the most striking and usual features is the flowing formation of the tracery and panelling, to which attention has already been directed (see Fig. 478). The so-called fish-bladder form is that which most frequently occurs (Fig. 490), whilst at the end of the period a meagre branch or stem-work is met with.

§ 326. The piers of the nave are sometimes moulded (Fig. 491, *a*, *b*), but are frequently circular; they are either quite plain, or the prominent arch mouldings are led up from below, and pass to the arch without the intervention of an impost or capital (Figs. 492 and 493). This defective arrangement, which is of frequent occurrence, may be viewed as characteristic of this style, although it occasionally occurs in buildings of an earlier period.

§ 327. The arches are generally described from two centres: the semi-circular arch is occasionally met with, as well as an elliptical, towards the close of the period. The inflected arch (Fig. 494) also occurs, as well as the ogee arch described from four centres. A flat lintol, with the corners rounded off, is also met with over doors, windows, &c. (Fig. 495). The pyramidal canopies over arches are

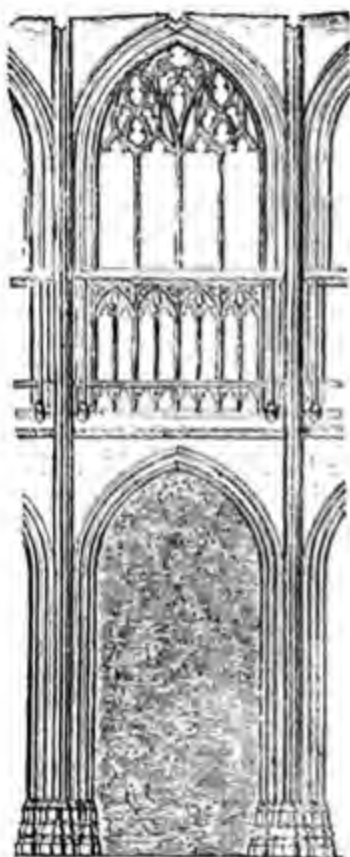
Fig. 490.



Tracery of the Fish-Bladder Pattern in the Church at Schorndorf near Stuttgart.

carried out in a richer and more complicated manner than previously. Towards the end of the period, the fillets in the jambs of the windows and doorways often intersect each other (Figs. 494 and 496).

Fig. 492.



Bay of the Nave of St. Maclou
at Rouen.

Fig. 491.



Profile of Piers in the
Flamboyant Style.
a. In the Church of
St. Maclou at Rouen.
b. In the Cathedr
at Orleans.

Fig. 493.



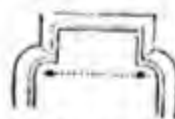
Spring of Arch with-
out Impost in the
Chapel at Brussels.

Fig. 494.



Window with Inflected
Arch at Moritzburg near
Halle.

Fig. 495.



Horizontal Lintel with
rounded corners.

§ 328. The profiles are not so good as formerly, inasmuch as the mouldings, which consist of broad hollows, with mouldings between that are disproportionately narrow, run into one another and produce an indistinct effect. The main and central moulding in vaulting-ribs and window-jambs is generally very prominent, which causes it to

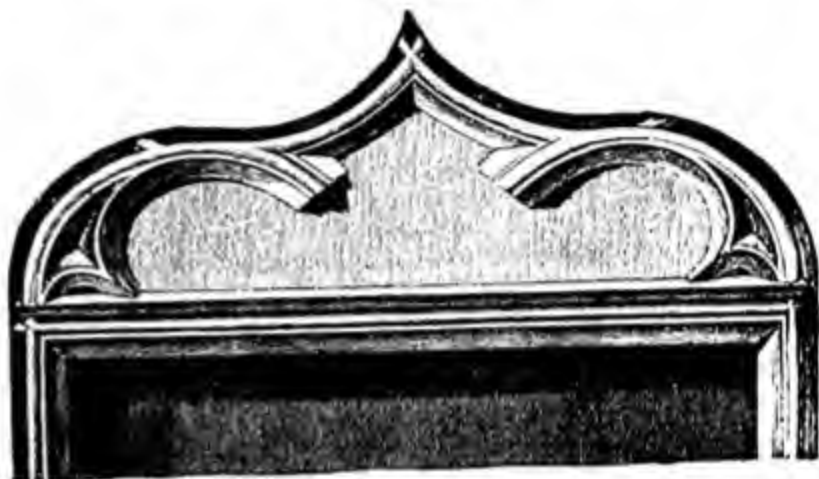


Pillar in a House at Nuremberg.

appear weak and unduly slender (Fig. 497). The horizontal profile also underwent considerable change (Fig. 498).

In the ornamental foliage the effect is not

Fig. 496.



Intersection of Fillets in a Doorway Setting at the close of the Period.

as good as formerly, on account of the small scale on which the leaves are executed, and also of the intricacy of the pattern, which usually consists of a combination of small leaves, that give it an indistinct appearance.

§ 329. The last period of the Flamboyant and Perpendicular styles forms also the closing epoch of the Pointed style and the date of its decadence, and coincides with that resuscitation of Roman architecture which is known under the name of the Renaissance.

The details in Figs. 499, 500, and 501, show in their treatment the connection of the forms of the Pointed style with those of the Renaissance.

Fig. 497.



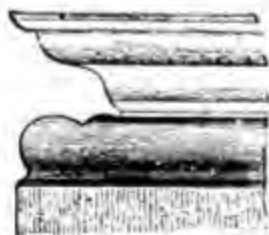
a. Transverse-Arch Profile in the Flamboyant Style. *b.* Vaulting Rib Profile in the Flamboyant Style.

Fig. 500.



Part of a Parapet in a House at Nuremberg.

Fig. 498.



Profile of horizontal Moulding
in the Flamboyant Style.

Fig. 501.



Crocket : mixture of Gothic and
Renaissance.

§ 330. The principles and peculiarities of the Gothic style as they universally hold good in the various countries in which that style was employed having now been referred to, although their

application was not always synchronous, it remains to mention the modifications which were brought about by local influences.

As has previously been mentioned, as regards the rise of the Pointed style in the North of Europe, it was in the north-eastern portion of France that it was first developed into an independent system: a fact which probably arose from the influence of Norman-Sicilian architecture. The new style was plain and simple, the forms of the Gothic arch being introduced into the Norman Romanesque basilica and applied to the vaulting construction of the interior.

The semi-circular shape of the termination of the choir as it existed in the Romanesque churches, was retained in the earliest churches in the Pointed style, but was subsequently newly arranged with three, five, or seven sides, the aisles being continued round the choir, and being connected with small chapels, which at first were semi-circular, but which subsequently assumed a polygonal form.

§ 331. Instead of the quadrangular piers of the vaulted basilica, with their half-columns, circular ones were again adopted, not, however, slender, as in the Early Christian basilica, but of sufficient strength to support the vaultings. In the early period the arches and ribs of the vaulting, as well as the shafts supporting ribs which project from the

Fig. 502.



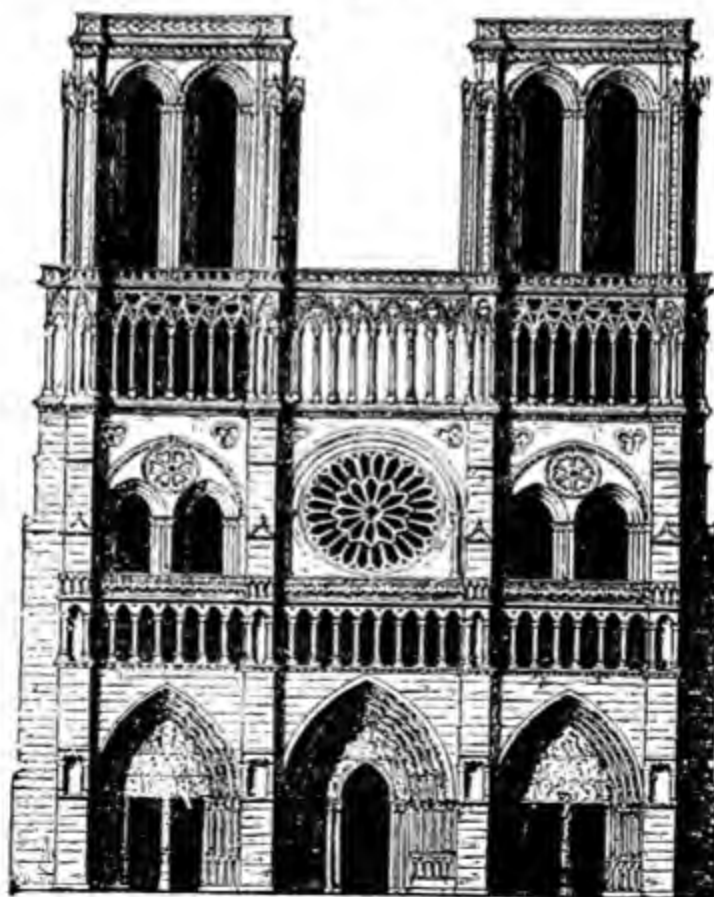
Bay of the Nave in Notre Dame at Paris.

walls of the nave, rest on the abacus of the capital (Fig. 502). Soon, however, the vaulting-piers were constructed in a more organic manner, and started from the base of the pier, and were attached to the same, as were also the half-columns which serve as supports of the arches and ribs of the aisles, but the central pillar still remains the real nucleus, and has a larger capital than the adjoining shafts of the pier, whilst the lighter half-columns have smaller capitals.

Whilst all the vaulting-lines are carried out in the pointed arch, still the Later Romanesque profile of the broad soffite with edge mouldings is retained in the arch itself, and thereby causes the arch to differ materially from the oblique profile which characterizes the arch of the Pointed style in its later development.

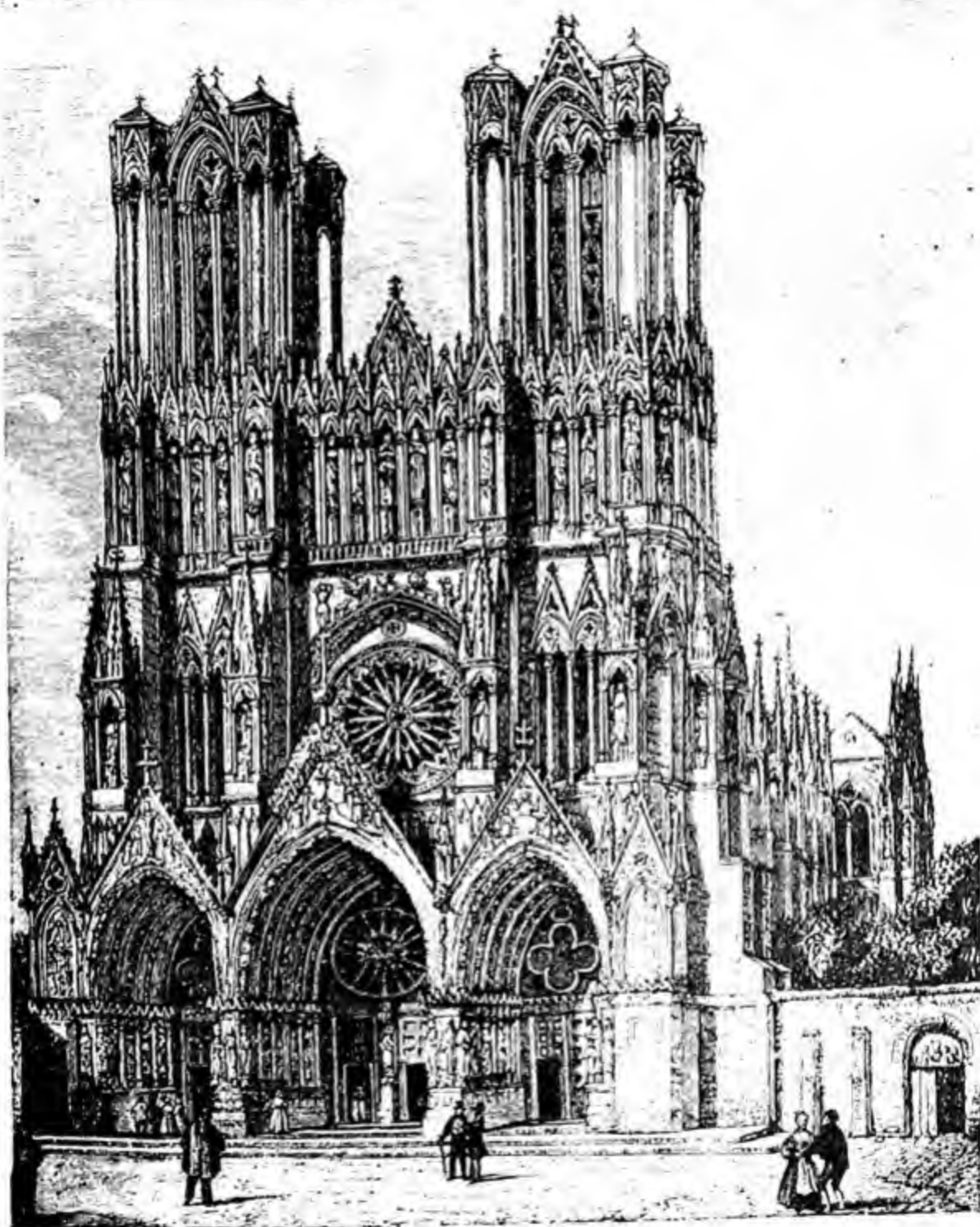
§ 332. In the façades the prevalence of horizontal lines appears

Fig. 503.



Façade of Notre Dame, Paris.

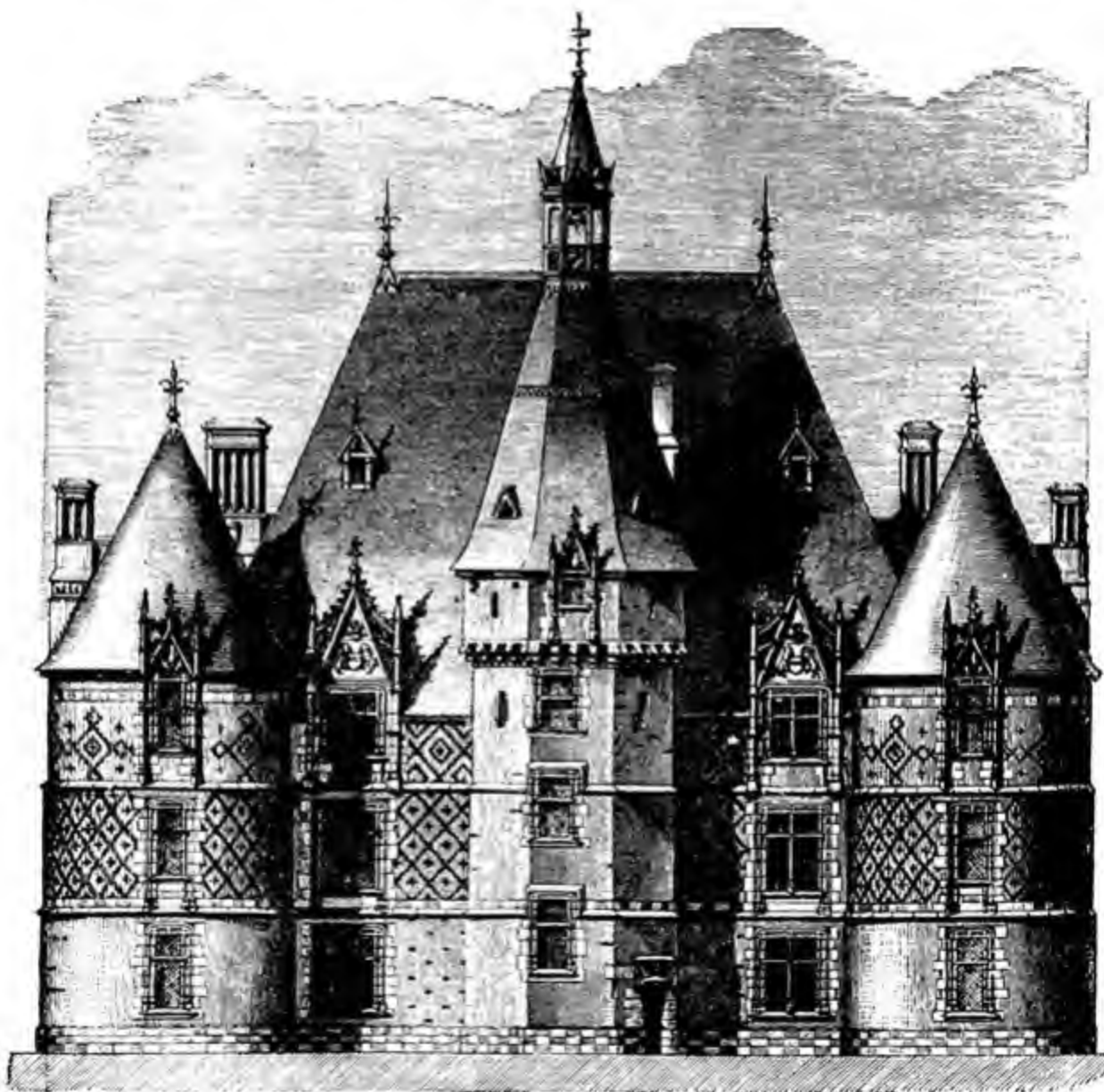
Fig. 501.



Rheims Cathedral.

not completely in accordance with the soaring character of the Gothic style. Rows of niches or arcades are frequently introduced one above the other, and certainly form a rich and delicate ornament to the front, in strong contrast with the upward tendency of the piers. The large window over the central doorway is circular, or rose-shape, as in Romanesque buildings, and not a pointed window. Fig. 503 shows a façade of the primitive, severe, and still Romanesque type, whilst

Fig. 505.



Château at Martinville.

the later façades are for the most part more magnificent, though the effect of the architectural elements is somewhat prejudiced by the excessive richness, especially of the sculpture which is introduced in the doorways, arcades, and other parts.

Fig. 505 serves as an example of the application of the Gothic style to châteaux.

§ 333. The early system of north-eastern France is also displayed in the sacred buildings of Belgium and Holland, and that not only

Fig. 506.



View of the Town-Hall at Brussels.

during the period of development, but also in later times, although no progress in æsthetic taste is perceptible. The circular piers are for the most part retained in the manner described, the vaulting-shafts rising from the capital on which they rest, as shown in Fig. 502. The naves, moreover, were often constructed of such broad

Fig. 507.



Belfrey at Bruges.

dimensions as to necessitate the employment of wood for the vaulting; the intercolumniation also was greater, whilst the walls produced

the effect of heaviness. The exterior, likewise, as a rule, appears heavy and tasteless, although rich decorations occur in many buildings; for these enrichments are designed rather on arbitrary fancy than with a view to preserve harmony with the constructive organism of the building.

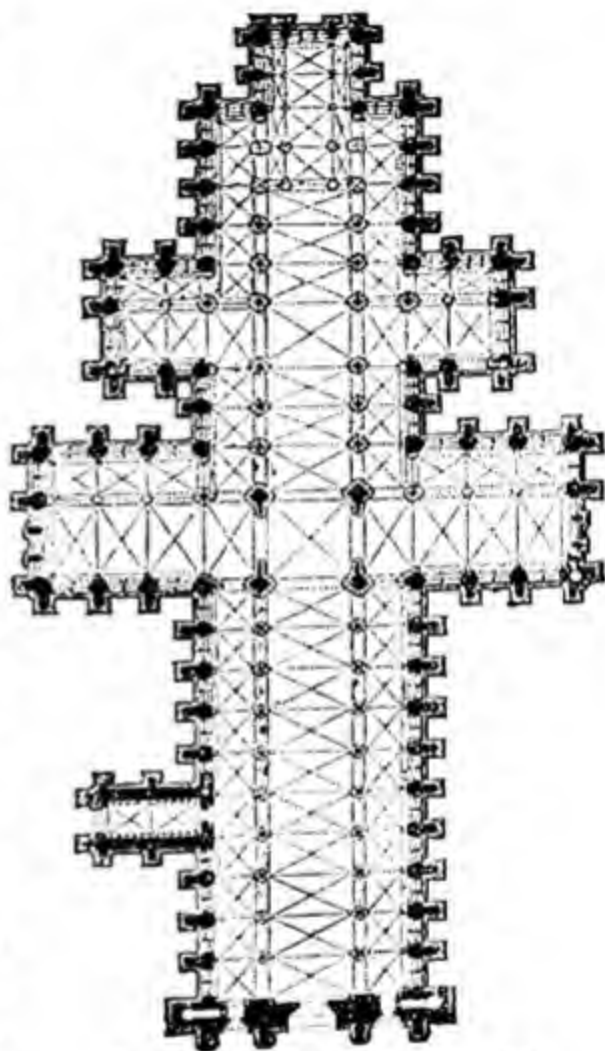
Of especial importance, and corresponding with the sacred edifices, are those built for civil purposes, as, for instance, the Town-Halls (Fig. 506), which are generally executed in a magnificent and brilliant way with great architectural and plastic profusion; a bold and massive bell-tower, or belfrey, generally forming the most essential feature (Fig. 507).

§ 334. The Pointed style in England was formed in a peculiar and independent manner. The simple Pointed style of the earliest period, known by the name of Early English, soon displays the impress of a varied ornamentation:

it was probably introduced from France, as the Later Romanesque had previously been. The fantastic and delicate execution of the details which is noticeable in French Gothic churches was not, however, attained. In English churches, moreover, many differences of style are perceptible in one and the same building.

As the purest specimen of the Gothic style in England, may be mentioned the nave of York Cathedral and the chapter-house adjoining it (1291—1330).

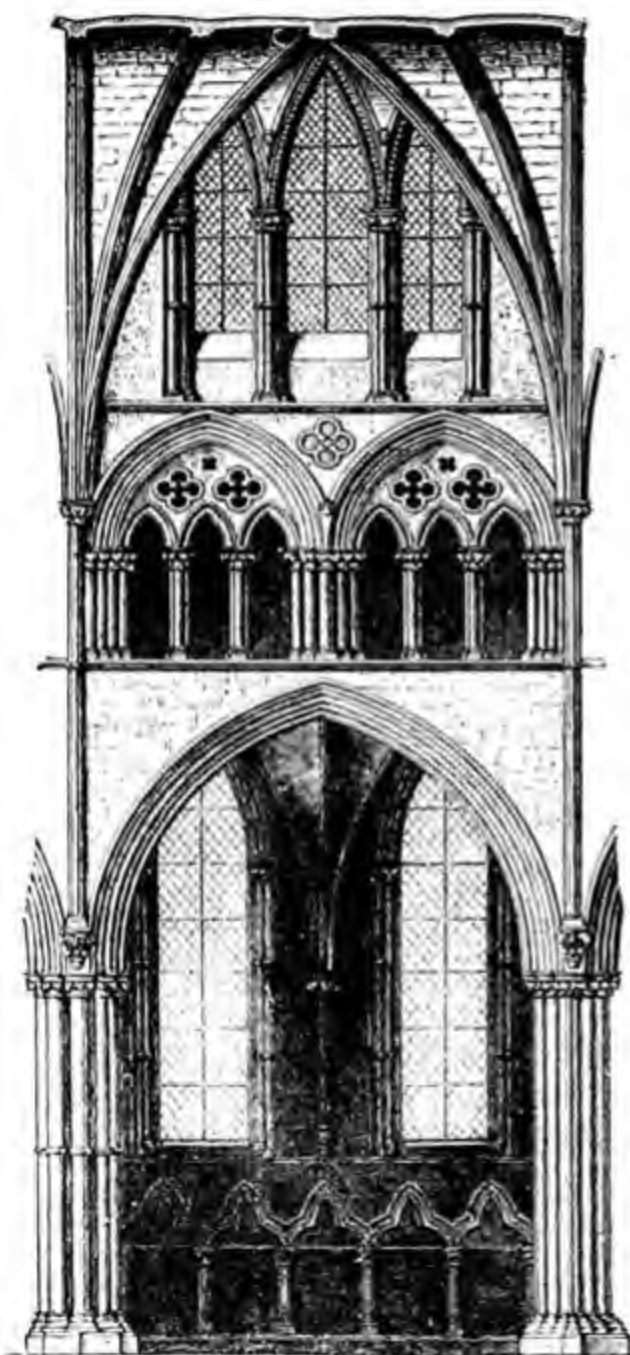
Fig. 508.



Ground-Plan of Salisbury Cathedral.

As instances of especial richness in architecture, the chapel of King's College, Cambridge (1441—1530), and the magnificent burial chapel of Henry VII., in Westminster Abbey, are,

Fig. 509.



Bay of Nave in Lincoln Cathedral.

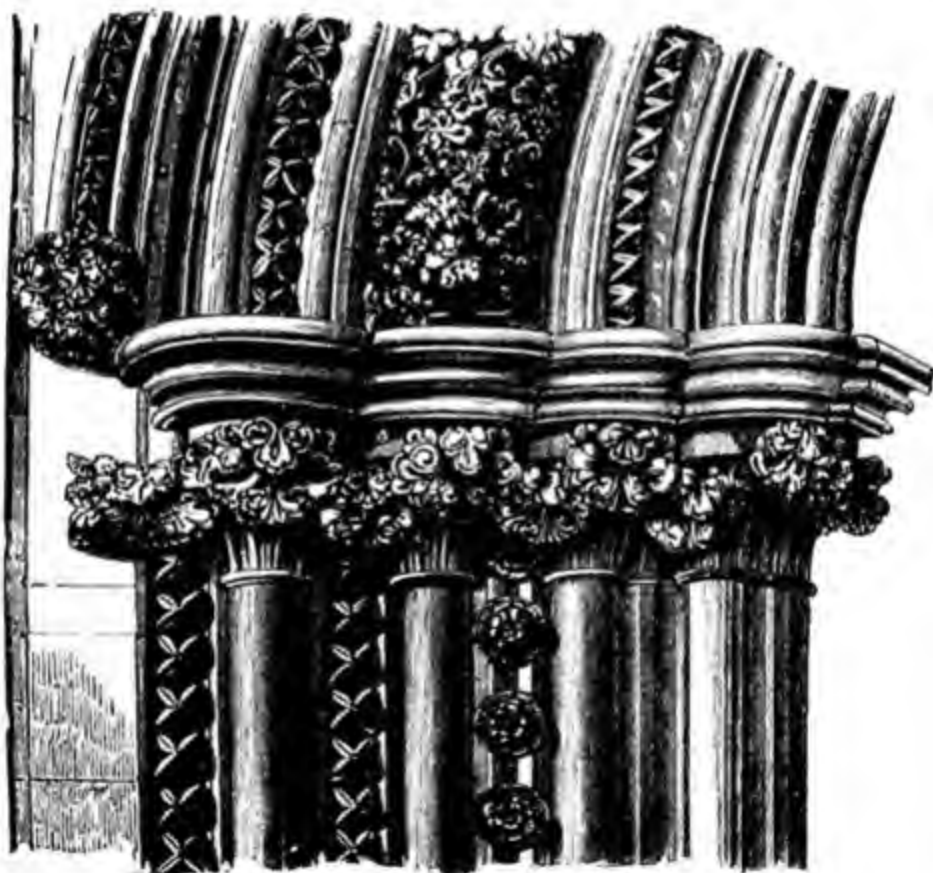
amongst others, to be noted.

Amongst the peculiarities of the English Pointed style are that the churches, like those of the Later Romanesque period, are generally of an extreme length, and have a double transept (Fig. 508). Instead of the polygonal termination of the choir, with the passage round, which enhances the picturesque effect, the east end is frequently supplied with a chapel, known as the Lady-Chapel; in instances where this prolongation does not occur, the eastern termination of the building is generally effected by a straight wall, pierced by a large, and often enormous window. Only isolated exceptions, as, for instance, Westminster Abbey, exhibit the usual termination of the choir with chapels which prevailed on the Continent; and these exceptional cases probably arose through French influence. This

termination in a straight wall, with a window which takes in its whole extent, and is enriched with tracery, has a highly imposing effect, owing to its striking dimensions, especially when it is filled with painted glass, and the brilliant colours blend harmoniously together. Thus the great eastern window of Salisbury Cathedral is thirty-five feet broad by eighty-five feet high. Without a large window of this description, the straight termination of the choir has decidedly a less favourable effect than the polygonal.

The piers on which the vaults rest, generally consist of a kind of clustered column, in which the shafts rest against the pier that forms the nucleus, or are united with it in the shape of half-columns

Fig. 510.



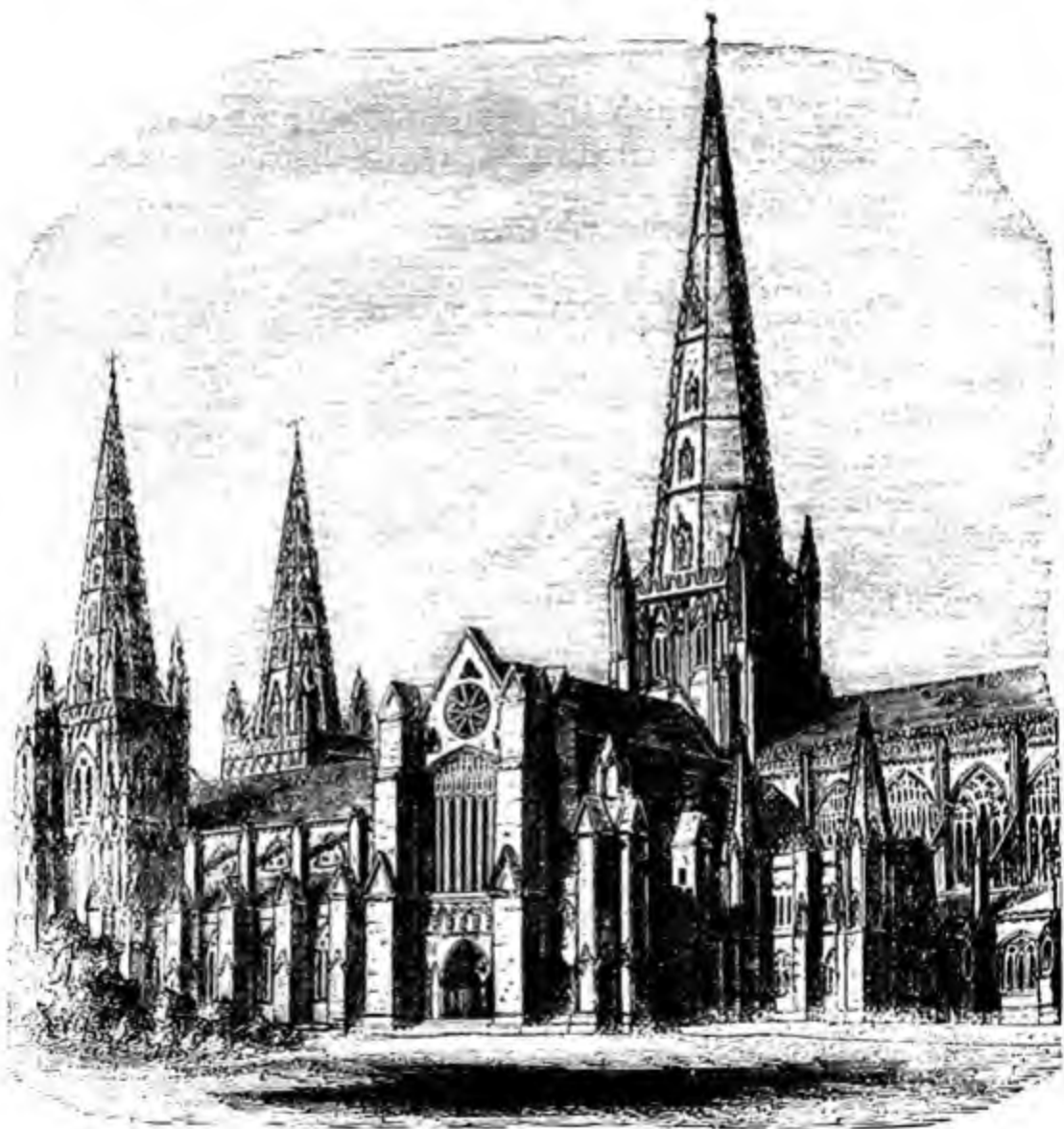
Part of a Door-Way at Lincoln.

(Fig. 509). They are generally only as high as the aisles, and form their vaulting-shafts, whilst the supports of the vaulting-ribs of

the nave spring from corbels on the walls of the same. The ribs themselves are richly moulded in correspondence with the clustered piers.

On the whole, the vaults of English Gothic churches are more richly constructed than those of the Continent, the reticulated form of roof mentioned in Section 302, as well as the fan roof, being frequently employed.

Fig. 511.



Lichfield Cathedral.

The English Gothic ornamentation is, moreover, different from the German Gothic. Although, as a rule, the Gothic system of orna-

mentation is a faithful copy of natural vegetable forms, yet in English buildings a stiff and peculiar treatment of the foliage, and one that deviates far from nature, is exhibited (Fig. 510).

The high pointed arch, or lancet arch, is generally employed in the windows, whilst frequently several lights are grouped together after the manner of the Triforia.

§ 335. The construction of the exterior adheres to simple leading forms, without, however, bringing them to a high state of perfection. Thus, for instance, the buttresses are merely masses of masonry capped by a gable (Fig. 511); but still the façades, as has already been remarked in Section 334, are richly constructed with many ornamental and graceful details, especially with arcades, as in the French ones, and with a profusion of panelling and tracery, (Fig. 512). They generally have large pointed windows. Taken in a general point of view, the Early English style may be viewed as an imitation of the French. Instead, however, of the usual circular wheel window which occurs over the main doorway in the corresponding French churches, a very large pointed window is generally introduced in the English. Besides the towers at the western façade which occur but rarely, a quadrangular one is sometimes met with over the intersection of the nave and the main transept (Fig. 511). Some English Gothic churches have a single tower over this point of intersection, which has the effect of giving a pyramidal appearance to the entire design of the building. The main or western façades of the English Gothic cathedrals can, however, by no means bear comparison with those of the Continent, inasmuch as the rich doorways and sculpture which produce such a considerable effect in Continental buildings are either totally wanting in the English cathedrals, or when they do exist, fail to produce such a pleasing impression.

When a spire occurs in connection with these towers, it rests immediately on the quadrangular substructure without any octagonal base. In the later period, that is to say, in the Perpendicular style, the towers terminate in battlements like the towers of castles, and have pinnacles at the corners (Figs. 513 and 514). Similar battlements were also introduced in this style over the other terminating lines of the buildings, below the spring of the roof. At the same

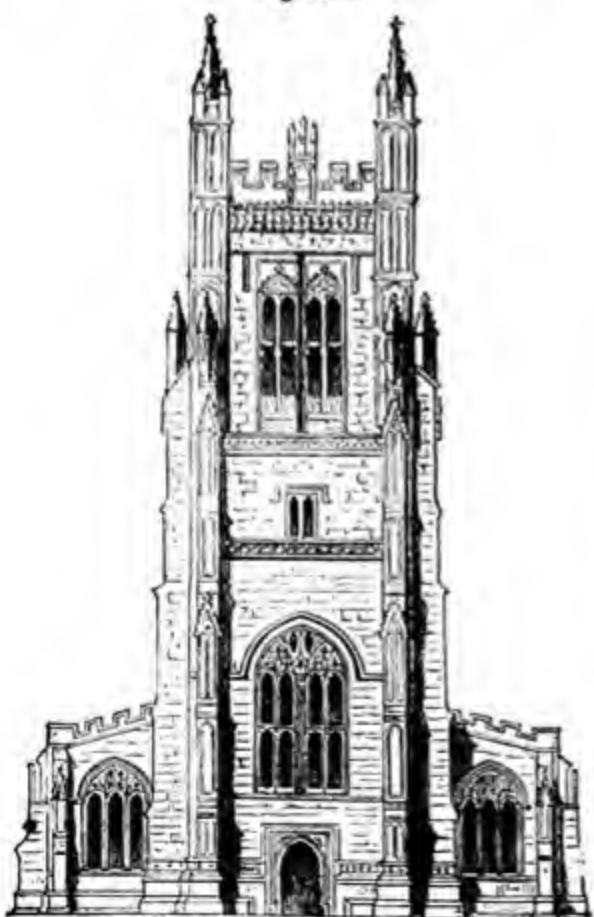
time a predilection for flatness and breadth at the expense of the height is clearly discernible.

Fig. 513.



Tower pinnacles of Canterbury Cathedral.

Fig. 514.



Façade of St. Neots Church.

This Gothic style degenerated in the fifteenth and sixteenth centuries into the Perpendicular or Tudor style, and its essential principles underwent a complete change. The Perpendicular style, which has already been alluded to in paragraphs 323 and 324, has continued to be employed up till

Fig. 512.



Façade of Lichfield Cathedral.

the present day, particularly in collegiate foundations (Fig. 515) as at Oxford and Cambridge, as also for other architectural works, such as country-seats and residences. The castles of the Middle Ages are generally taken as models for the latter class of buildings (Fig. 516), though some of them are constructed in other styles.

§ 336. The Pointed style seems to have been introduced into Germany from France, as has been shown to have been the case with

Fig. 515.



Eton College.

Fig. 516.



Balmoral Castle before the modern alterations.

England, and the date of this introduction was a still later one. The Gothic seems to have experienced considerable difficulty in ousting the Later Romanesque, and the latter style still continued to be employed even after the establishment of the Gothic, and buildings built during this period display peculiar beauty. As by degrees the elements of the Pointed style were intermingled with the Later Romanesque, those buildings were erected which are so distinctive a feature in German architecture, and which belong to the Transition period. Although, however, the origin of the Gothic style is not German, yet owing to the fact of its being introduced into that country in a mature state of development, its application and employment is in many districts purer and more harmonious than in any other country. Since this development of the Gothic style in Germany took place in several different directions a classification has to be made according to districts, in which the buildings both in their design and in their individual parts differ materially from one another.

In the oldest buildings in the Pointed style it is perceptible that the Later Romanesque still asserted its influence and qualified the details of form, as, for instance, in the case of Magdeburg Cathedral, in which the Early Gothic is found in conjunction with the Later Romanesque, both as regards the formation of the piers and the ornamentation, as well as that of the transept and choir. The latter, however, already assumes a polygonal form, and has a passage round it, with connected chapels, as in the case of the French cathedrals.

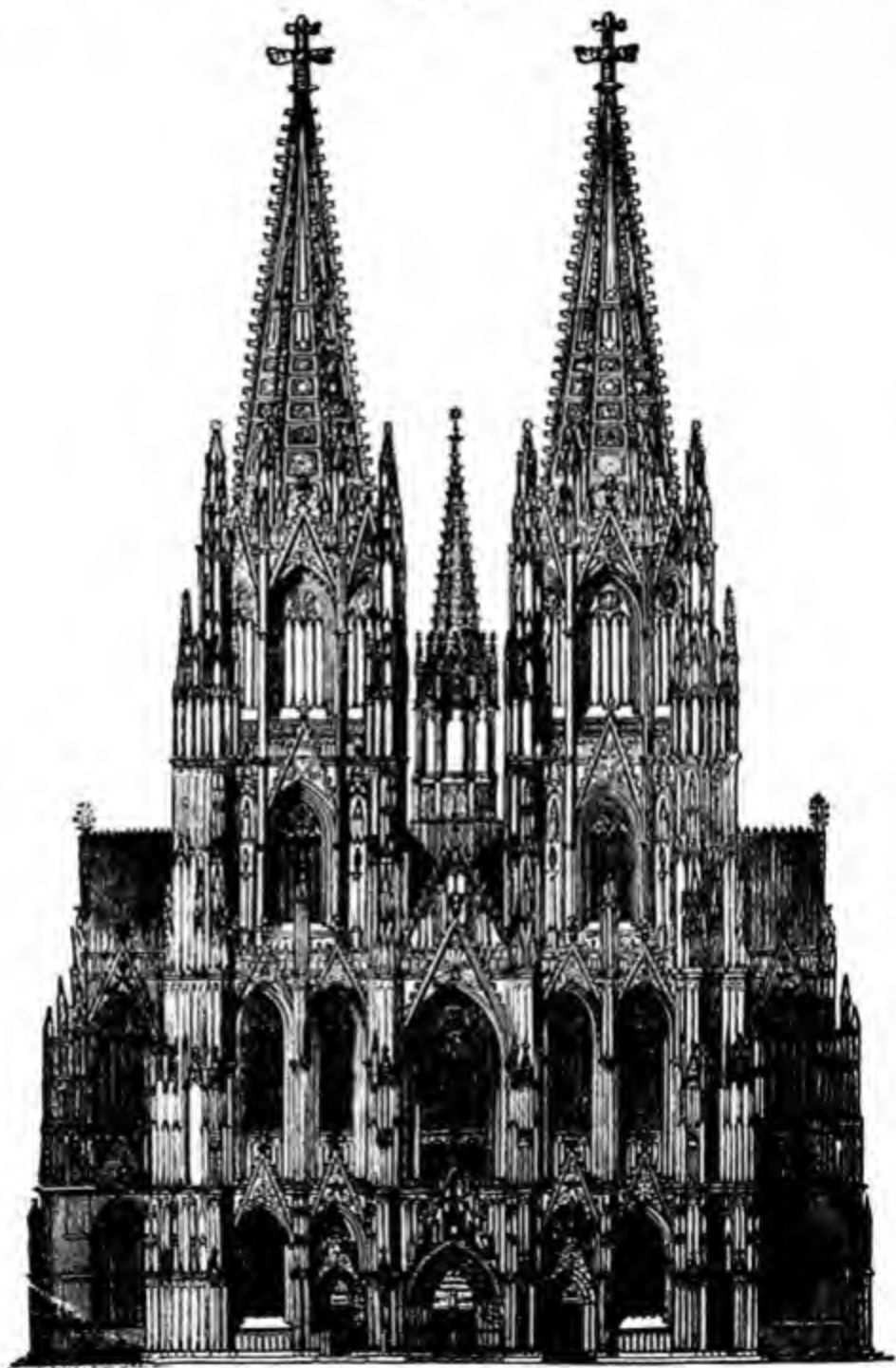
At the time of its first appearance in Germany the Pointed style displays plain and simple forms, as it does elsewhere, but the duration of this primitive phase was not so protracted as it was in France, inasmuch as the earlier style had nearly completed the period of its prevalence in the latter country at the time of its introduction into Germany, whilst the developed style was imitated from French models from its first appearance. The piers are for the most part round, and have half-columns in connection with them, which serve as supports to the ribs. The buildings of North-Western Germany, as also those of Saxony and Thuringia, especially bear this mark of simplicity, not only in the thirteenth, but as late as the fourteenth

century, as, for instance, the Church of St. Elizabeth at Marburg. It was here that an architectural arrangement, which is frequently found in Germany, and especially in Westphalia, was probably first introduced. It consists chiefly in the nave and aisles being of an equal height, in the omission of the transept, and frequently of the passage round the choir with its adjunct of chapels. In consequence of this construction the inner space has a free and extensive appearance, but conveys the expression of a broad hall rather than of a church, and consequently Hall-Churches appears a suitable name for buildings of this description. An immense roof takes in both the nave and the aisles; the exterior consequently conveys a less pleasing impression than that of churches built according to the usual system. These hall-churches display great simplicity, which amounts even to tastelessness. The great height of the aisles, which equalled that of the nave, necessitated a greater height in the windows than in the usual system with low aisles. At the commencement two windows were introduced one above the other, so that from the exterior the impression was conveyed that there were two internal spaces one above the other which required lighting. Subsequently one window was employed, which was extremely narrow in proportion to its breadth, and divided into two or more divisions by bands of tracery. Instances of these churches occur in various parts of Germany, as, for instance, the Cathedrals of Vienna and Meissen, the Church of St. Sebaldus at Nuremberg, and the Church of St. Lambert at Munster.

§ 337. The buildings of Western Germany display a richer style, and Cologne Cathedral may be considered the beau-ideal of Gothic architecture in its noble and harmonious design (see Fig. 463). Although it has affinity with the models of French cathedrals, and especially that of Amiens, Cologne Cathedral bears the stamp of a far higher development of style than its prototypes. Its bold proportions are conceived with force and solidity, its individual parts display the most multifarious change and richness, but still the whole is designed strictly in conformity with one spirit, and harmoniously executed in chasteness and purity. Nothing appears arbitrary in the structure, nothing without reference to the entirety, and the façade, with its two towers terminating in gradually tapering spires, will, of necessity, when it is finished, produce the most sublime effect

(Fig. 517). Strasburg Cathedral possesses the advantage of being completed, with the exception of one tower: this structure is, like

Fig. 517.



Intended West Front of Cologne Cathedral, when completed according to the original design.



Fig. 513. Church of St. Stephen at Vienna.

Cologne Cathedral, though not to an equal degree, a noble specimen of the soaring tendency of the pure Gothic style. In some respects, however, Strasburg Cathedral has more affinity with the French system, owing to its separating galleries, its horizontal mouldings, and its principal rose-window. Its proportions are very fine, and the mixture of the French and German styles is skilfully carried out, so as not to militate against the purity of the building. The interior, moreover, has a sublime effect, and differs from that of other Gothic cathedrals, owing to the breadth being greater in proportion to the height.

The Cathedral at Freiburg, in the Breisgau (Fig. 461), may be considered as the most complete specimen of this style, and its spire, which rises 385 feet from the ground, is slender, and has much open-work, and rests on a plain quadrangular substructure.

§ 338. In the South-Eastern districts of Germany a prevalence of the decorative element is noticeable, although this is not universally the case. It is especially remarkable in those buildings which belong to the later period, as, for instance, in the cathedrals at Ratisbon, Vienna (Fig. 518), and Ulm, as well as in many others of the fourteenth and fifteenth centuries.

On the other hand, during the later period of the style, in other parts of Germany, especially in the North-Eastern districts, the exteriors are heavy and massive (Fig. 519). The buttresses are frequently employed internally instead of externally, in which case the spaces between them are converted into chapels.

The piers of the naves are, as a rule, octangular, with more or less slender half-columns introduced on the eight flat surfaces or at the corners as supports of the girders: in later times these were, however, dispensed with.

The naves and aisles are for the most part of equal height; the main arches are simple, with bold circular mouldings and hollows. The windows are far from elegant; they are rarely enriched with tracery or mouldings. The exteriors convey the impression of simple massiveness, inasmuch as all the parts, the buttresses as well as the wall surfaces, are plain and tasteless, whilst the porch alone is constructed with a greater degree of richness.

§ 339. An especially remarkable and entirely local description

of building in the Gothic style prevails in those districts of Germany which border on the Baltic, that is to say, in Mecklenburg, in the provinces of Pomerania and Prussia, and in the Marches of Brandenburg, as far as the west side of the Elbe. Livonia and Courland, and even Scandinavia, are to be included in this category. It is employed not

Fig. 519.



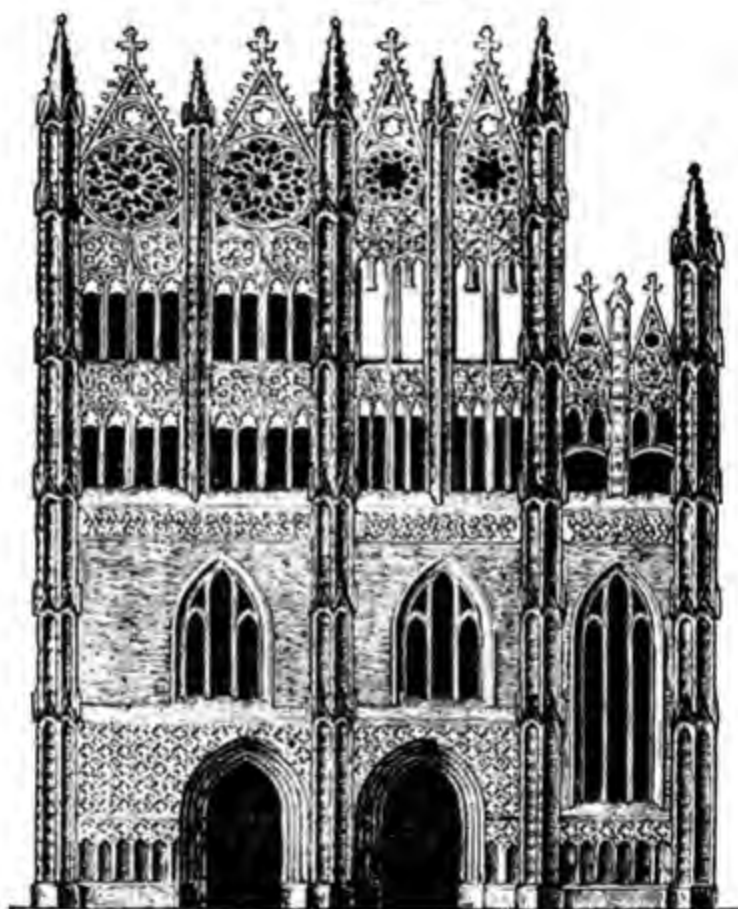
Church of St. Mary at Lubeck.

only for churches, but also in the strongholds and castles of the knights of the Teutonic Order. A certain uniformity is peculiar to these buildings, which is owing principally to the influence of the Hanseatic League, but partly to the power and authority of the Teutonic Order.

These buildings are, in the main, strictly constructive and simple, so that they are effective by their massiveness rather than by their

details. In the later period, however, while their proportions remained bold, they were highly ornamented in a peculiar fashion, which was effected by the material of which most of these buildings were constructed, that is to say, of burnt bricks. A peculiar ornamentation

Fig. 520.



Part of the Façade of the Church of St. Mary at Brandenburg on the Havel.

of the exterior arose from the employment of this material in various patterns, whilst the use of sculptures was quite exceptional. Friezes and individual embellishments, as well as whole surfaces, were adorned with geometrical patterns, generally of projecting black glazed bricks on a red ground, whilst open-work was at the same time introduced in various portions of the edifice, as, for instance, the gables (Fig. 520). Alternate layers of red and black glazed bricks, or of other colours, are also found in these buildings, and the same effect is produced as by the employment of various coloured marble or stone in the buildings of Central Italy during the Middle Ages.

§ 340. In Italy the pointed arch always remained a foreign element, and did not constitute in that country a system founded on itself and on an organic construction, which might have led to an independent development. The soaring tendency, which characterizes the whole construction of the Pointed style, is not present in the same degree as in the best buildings of other countries, or at any rate it does not form a determining feature: a tendency towards breadth rather than height is perceptible, especially in the internal spaces, by the wide intercolumniation of the piers, and by the breadth of the nave, whilst the height is not increased to a proportionate extent. The effect produced is not so sublime as by the cathedrals on this side of the Alps, but still it has its merits in other ways through the feeling of repose which is produced by the vast and free extent of the interior, and by the employment of a rich ornamentation.

In these Italian buildings the horizontal lines were always predominant features, as in the galleries and mouldings, from which, as from many other details, it is clear that the influence of ancient architecture exercised an uninterrupted sway. Many of the features of the Later Romanesque style were, moreover, embodied in the Italian Pointed, such as the profile of the transverse arch, the circular-arched portals, and the pier-construction of the naves: even massive circular pillars occur instead of piers, whilst the clustered column, which so assists the aim of Gothic architecture, is wanting. Churches built in the Italian Pointed style are further distinguished from those of other countries by the buttresses being less in accord-

Fig. 521.

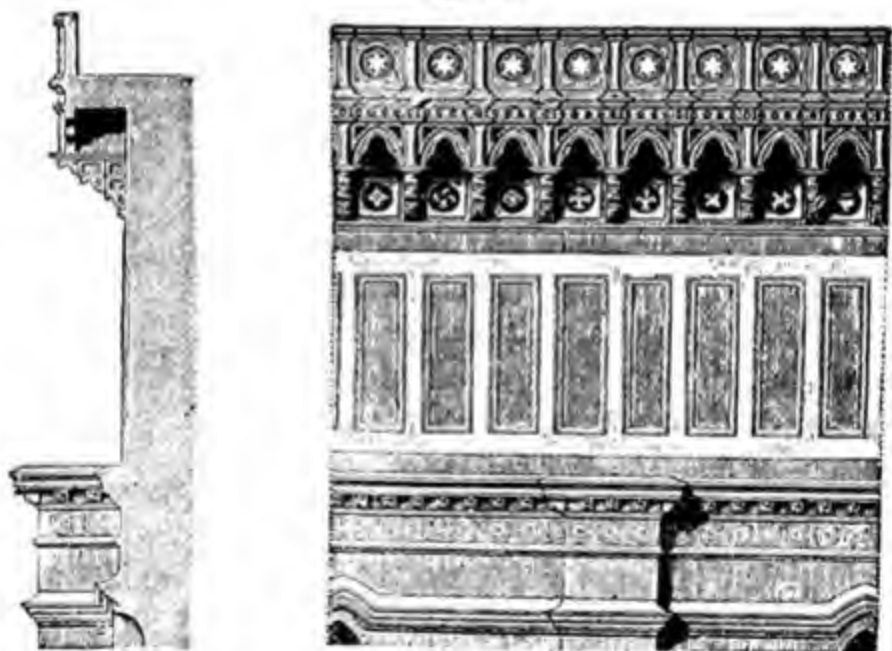


Campanile at Florence.

ance with the rest of the architecture, and by the windows not occupying such an important position, either as regards their size in filling up the surfaces of the walls, or by the beauty of their mullions and tracery: they are, on the contrary, so small, that large portions of the surface of the walls, both internally and externally, remain blank. The tower is not, as in other countries, organically connected with the construction of the church, but is always, as it was in preceding periods, an isolated structure reared in its vicinity (Fig. 521). At the intersection of the nave and transept a dome is introduced in many of the churches.

§ 341. Italian buildings in the Pointed style are richly ornamented, especially in the façades, and though the embellishment is not based on the principle of an organic conformity, yet a magnificent

Fig. 522.



Detail of the upper termination of the Façade in Fig. 523, with Arcade.

and pleasing effect is produced, which is enhanced by the beauty of the many-coloured marbles which are employed as material, and by the inlaid mosaics (Figs. 522 and 523). In this respect the façades of the Cathedrals at Siena, Orvieto (Fig. 524), and Florence bear off the palm. But the most magnificent specimen of the Pointed style in Italy is Milan Cathedral (Figs. 526 and 527), although its style by

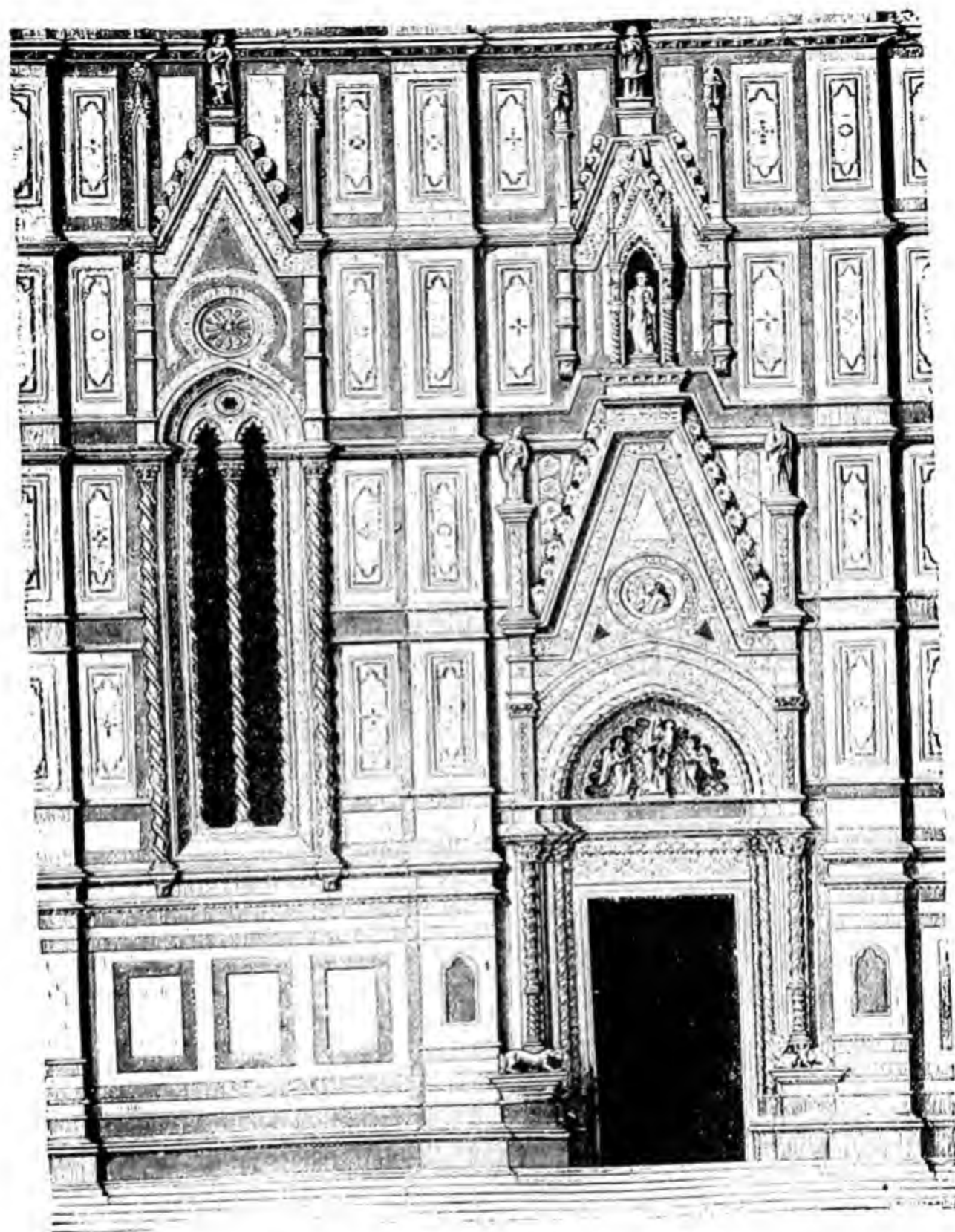


Fig. 523. Part of the Façade of Florence Cathedral.

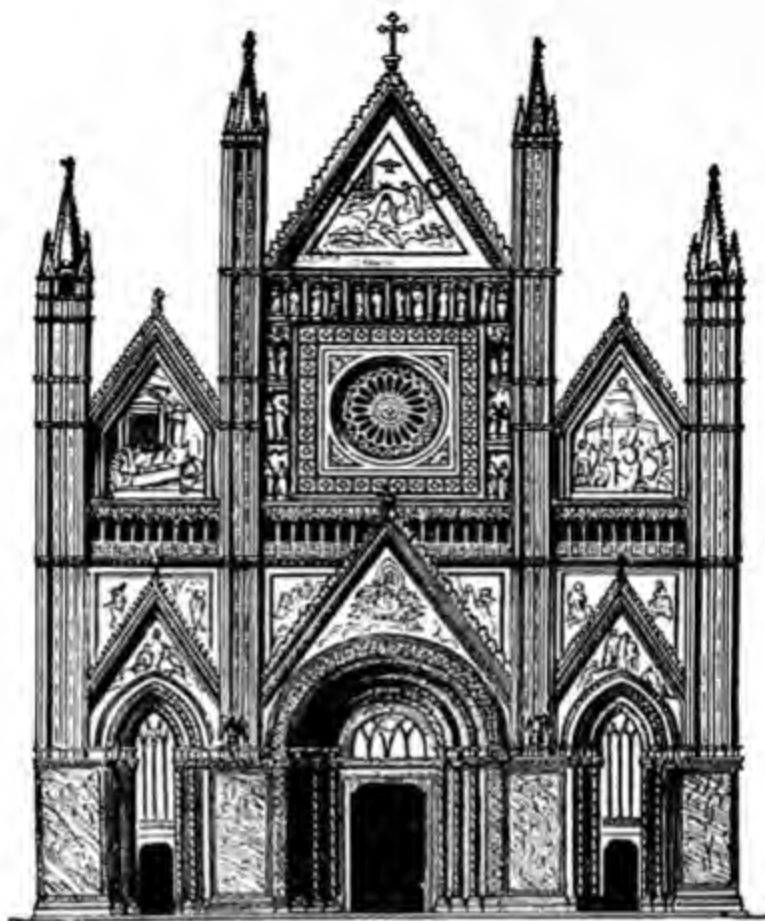


Fig. 524. Façade of Orvieto Cathedral.

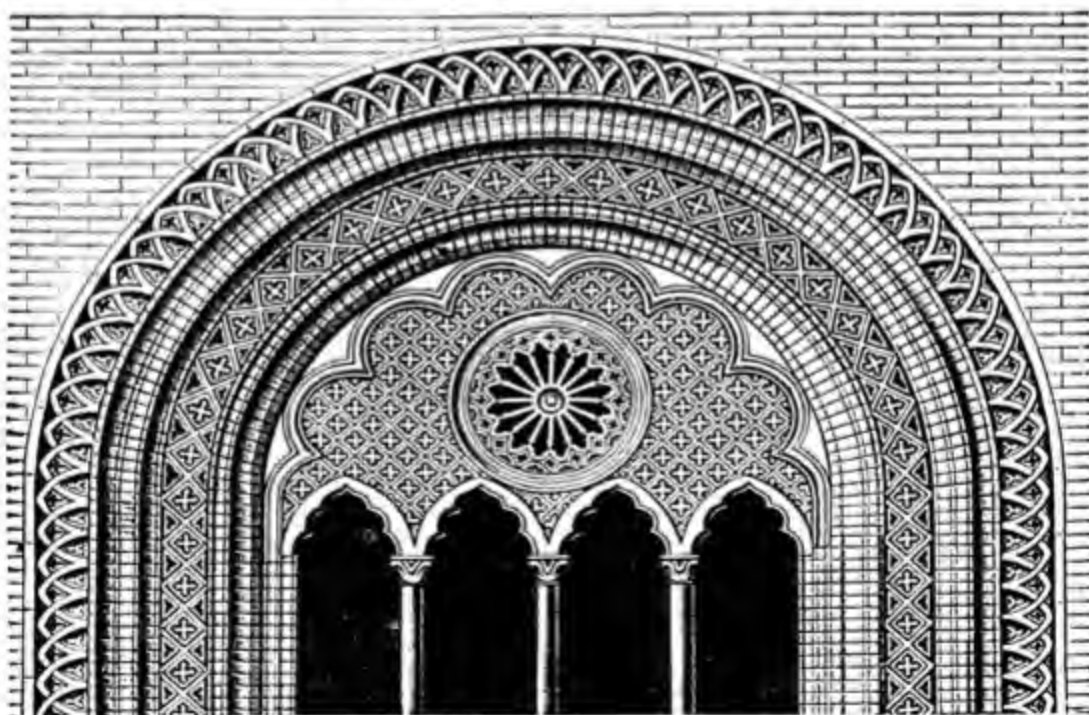


Fig. 525. Part of a Window in Cremona Cathedral.

no means comes up to the standard of good Gothic buildings, but is rather an intermixture of Gothic with the forms of the Renaissance, and would be subjected to more hostile criticism were it not for the building being constructed entirely and carefully of the most beautiful white marble, and for its imposing dimensions, and for the great rich-

Fig. 526.



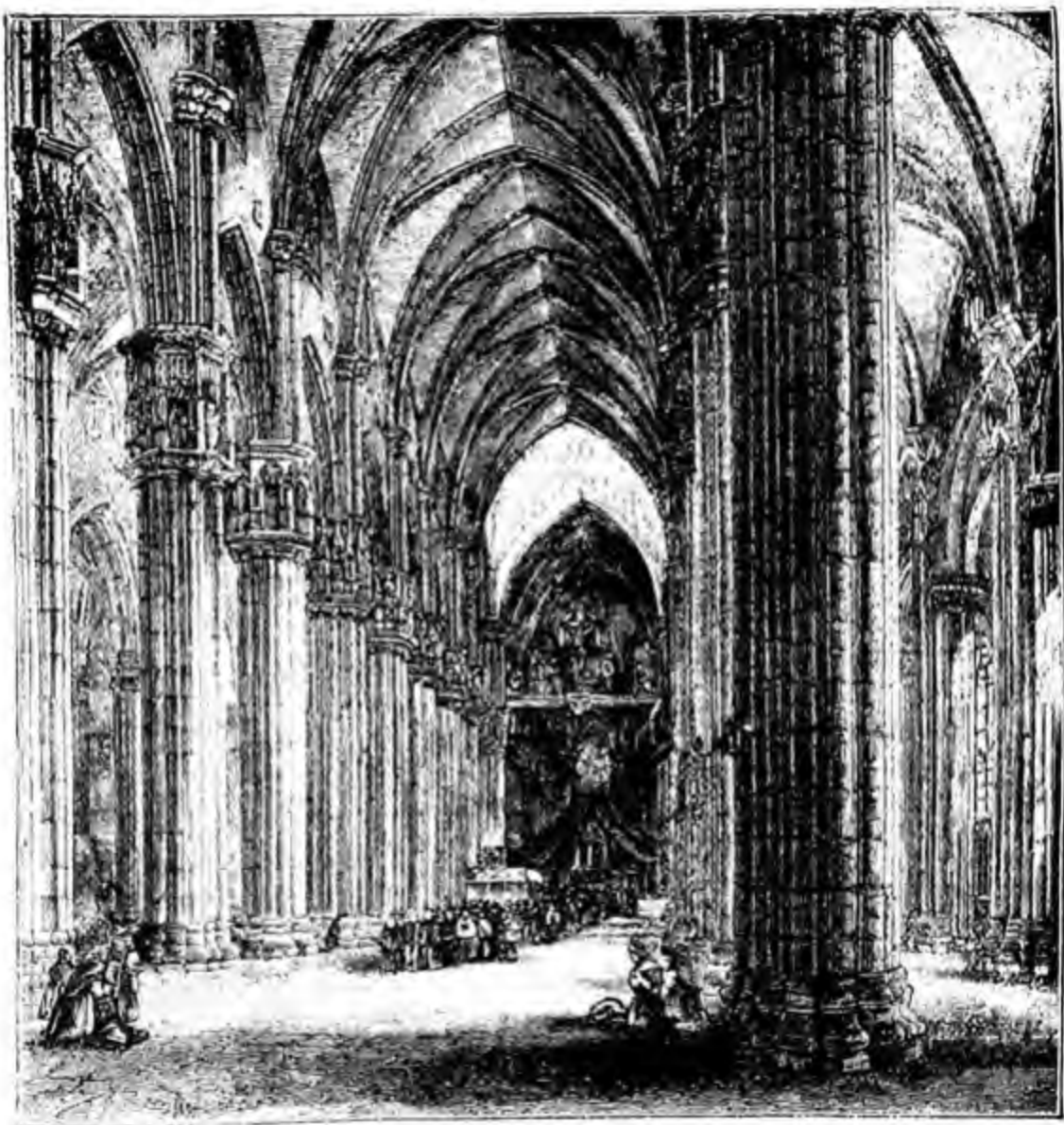
View of Milan Cathedral.

ness of the architecture in the ornamental parts, and, lastly, for the painted glass windows, which cast a tempered and religious twilight through the interior of the cathedral.

One especial peculiarity which occurs in Central Italy is that the exterior as well as the interior of the churches is ornamented with

alternate courses of light and dark marbles, as has already been shown to have been the case in the Later Romanesque churches.

Fig. 527.



Interior of Milan Cathedral.

In Upper Italy, on the other hand, the brickwork construction which was resorted to owing to the scarcity of marble, gave rise to many rich and peculiar devices in the mouldings, the framework of the windows, and in other decorative parts of the building. Fig. 525 gives an example of this.

In the Southern part of Italy the decoration of the façades and porches recalls the earlier Norman-Arabian method of ornamentation.

§ 342. The Pointed style was also frequently and successfully applied to public palaces and halls ; especially in Central Italy ; Later

Fig. 528.

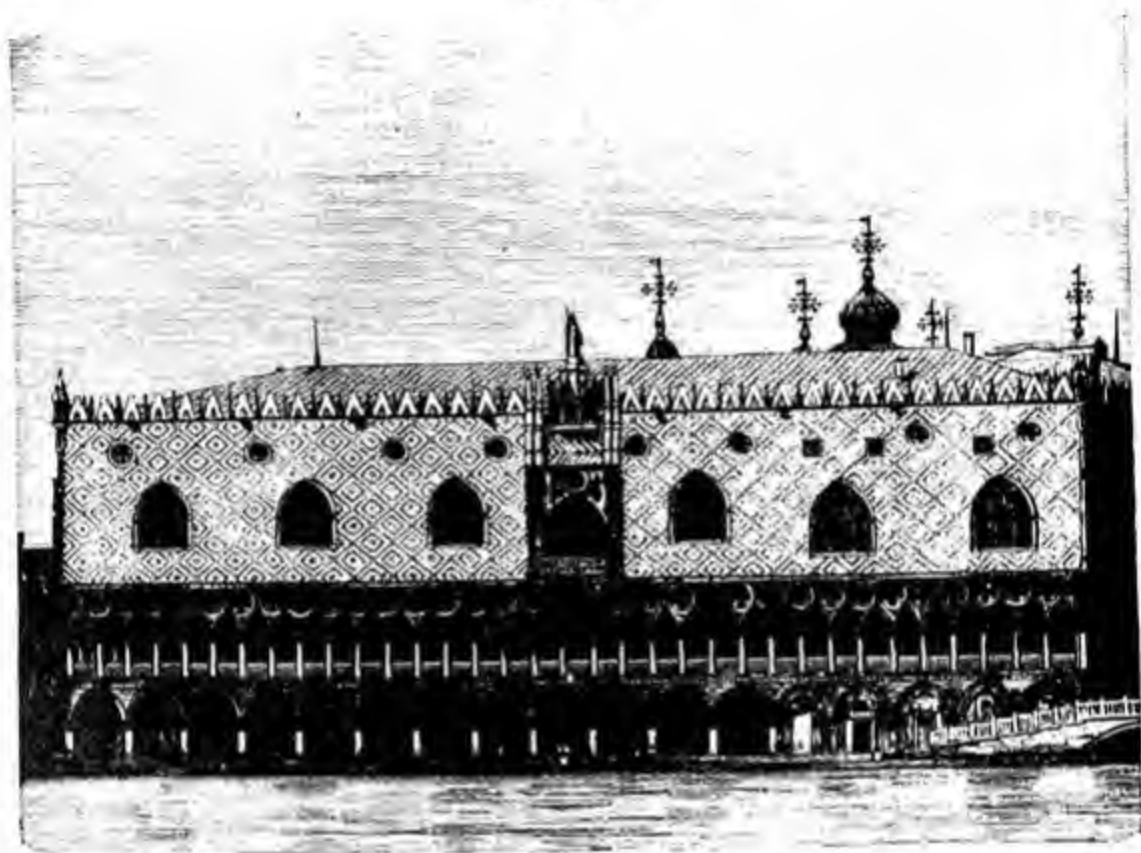


Palazzo Pubblico at Siena.

Romanesque elements were, however, still blended with the pointed arch. The Florentine buildings of this description form to a certain extent a separate class, and produce an imposing effect by their massiveness, as the Palazzo Pubblico at Florence and that at Siena

(Fig. 528), whilst their system of decoration displays a curious admixture of the two styles.

Fig. 529.



Palace of the Doges at Venice.

§ 343. The Venetian palaces form a class apart amongst buildings constructed in the Italian Gothic style. In these palaces the arches of the windows and halls rest upon shafts and terminate in intricate designs of open tracery work, as in the case of the celebrated Palace of the Doges (529 and 532). The arches have a wavy shape, which gives them an oriental appearance (Fig. 530). The enrichments, moreover, display, as they usually do in Italy, another mode of treatment to that which prevails elsewhere in the Gothic style, and which has been described in section 298. Fig. 531 gives an example of this by means of one of the capitals in Fig. 529 on an enlarged scale. In private palaces the disposition of the façade was settled and determinate. They were divided into three

parts, the middle one of which was always taken up by the above-mentioned traceried arcades, which were repeated in the various

Fig. 530.



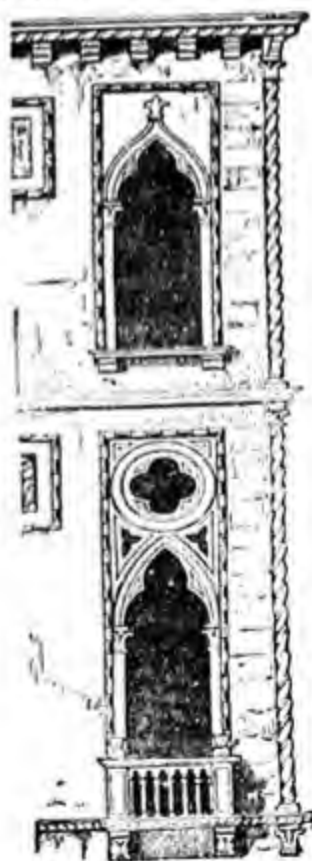
Detail in the Palace of the Doges of Venice.

Fig. 531.



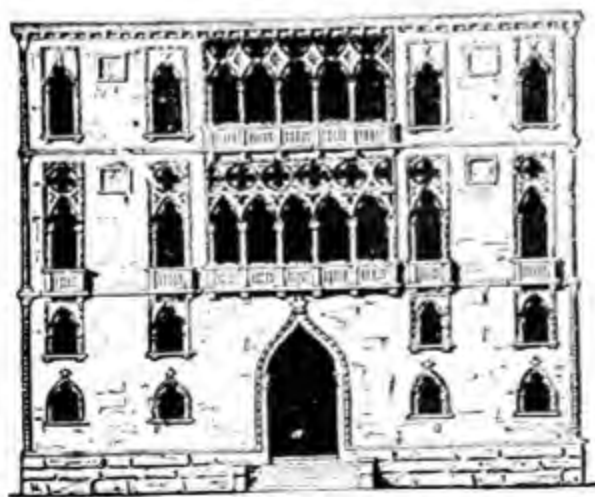
Capital in Figs. 529 and 530, on an enlarged scale.

Fig. 533.



Detail of corner in Fig. 532.

Fig. 532.



Façade of the Cavalli Palace at Venice.

storeys, and which corresponded with a large hall situated behind them and forming the principal room of the building. In each of the side divisions were introduced windows placed pretty widely apart. The corners of the façades were marked by slender shafts twisted like cables. The mouldings and cornice consisted merely of narrow bands, which generally rested on consoles (Fig. 533).

§ 344. In Spain and Portugal the horizontal line is a very prominent feature in buildings in the Pointed style. The system peculiar to Gothic architecture is, however, more purely and consistently carried out than in Italy, especially as regards the ground-plan, the disposition of piers and windows, and the system of vaulting. The exterior, moreover, displays a more harmonious execution, that is to say, as far as the heterogeneous elements which are combined in it would allow, for German, Low Country, and French influences were all active, as well as those of the native Moorish style. An imitation of the French system, with its splendid decorative treatment, is often met with, especially in the façades.

In Spain the cathedrals at Burgos, Toledo, Leon, and Barcelona are the most important sacred buildings, while in Portugal the Convent-church at Batalha is noteworthy.

The buildings which were constructed after the beginning of the fifteenth century are especially worthy of attention: they display a highly decorative style of architecture, and unite the elements of the Pointed style with the forms of the Renaissance. The east end occasionally shows a deviation from the French models, and is terminated rectangularly instead of by a polygonal choir. Where this occurs the choir is placed at the west end of the nave, and in combination with the five aisles and the series of chapels connected with them, produces a fine effect. A dome rises over the intersection of the transept and nave, as, for instance, in the cathedrals at Seville and Salamanca, and in the Convent-church of Bilem in Portugal.

THIRD BOOK.

MODERN STYLES OF ARCHITECTURE.

- I. The Architecture of the Renaissance (best period).
 - 1. The Architecture of the Florentine Renaissance.
 - 2. The Architecture of the Venetian Renaissance.
 - 3. The Architecture of the Roman Renaissance.
- II. The Roccoco Style of the Renaissance.
- III. Timber Architecture.
- IV. The Architecture of the present day.

I.

THE ARCHITECTURE OF THE RENAISSANCE.

§ 345. The series of original styles of architecture closes, strictly speaking, with the various styles that have been described in the foregoing divisions of this work, for all the new phases which have presented themselves in the domain of architecture since the abandonment of the Gothic style are more or less imitations of what previously existed, or, at the most, new combinations of elements which had already been employed. The manner of their re-application exhibits, on the other hand, a decided change, and many forms which were unknown in earlier times were developed in consequence of this reapplication, especially in the later period of the Renaissance style.

As early as the beginning of the fifteenth century, art commenced to take a new course of development, which, accompanying the employment of the pointed arch during the latter part of the prevalence of the Gothic style, was speedily extended in all directions.

The discovery of the productions of the ancients in statuary and painting, and the study of these works of art which was thereby stimulated, as well as the renewed interest in classical literature which was contemporaneously aroused by the long-hidden stores of Greek and Latin MSS. being brought to light, as, for instance, the work of Vitruvius on the architecture of the ancients, could not fail to bring Roman buildings into prominent notice, and to predispose the public mind in favour of the classic styles. Science, moreover in accordance with the spirit of the age, began, like art, to be classical rather than romantic.

A new system was consequently developed, during the first stages of which, namely, the Transition period, the elements of Roman

architecture came again into use, although the forms which belong to the Later Romanesque period, as, for instance, the division of the window-arches by mullions, were not entirely abandoned.

§ 346. This new style of architecture, which is known by the distinctive name of the Renaissance, that is to say, the new birth of Roman architecture, first sprang into existence in Italy as early as the beginning of the fifteenth century. It reached its zenith in that country in the course of the same century, and at the beginning of the following became a model for all other countries, in which, however, the Gothic style prevailed for some time longer, and maintained its ground against the encroachments of its rival. In Italy, on the other hand, the Pointed style was abandoned, except in isolated instances, and notably in Lombardy. The style which was thus introduced into the countries north of the Alps was consequently accepted there as one which was already developed, and the buildings constructed in it were mere imitations of the Italian; moreover, after it was introduced, it underwent no further change or development, and on that account was designated, especially in Germany, as the Italian style. It will therefore be sufficient to describe its phases and characteristics as they appear in Italian buildings.

The same reasons which militated against the development of the Gothic style in Italy were instrumental in occasioning the ready and definite acceptance in that country of the forms of ancient architecture. The large number of monuments of classical antiquity existing in Italy must have been favourable to the change, particularly as their influence had remained effective during the whole period of the Middle Ages.

§ 347. At the early epoch of its existence the new style of architecture displays not so much an alteration in the arrangement of the spaces and of the main features of the buildings, as in the system of ornamentation and in the aspect of the profiles. The object and construction of the buildings of the period in question were very different from the colossal monuments of ancient Rome, which were now to serve as an example, and consequently the model was mainly copied in the decorative details, principally in the columnar orders with their various entablatures. It is owing to this cause that the façades appear to a certain degree to be merely appendages

to the main building. Architects, moreover, could not at once abandon the customary freedom of conception which had been permissible in the Romanesque style, nor subject their imagination to the strict rules of Roman architecture by surrendering all endeavours to attain picturesque effects. Roman architecture was consequently not at first a model which secured that slavish obedience which became its prerogative in later times. At the outset, moreover, the essential character of Roman architecture was not fully understood, as far as material and construction are concerned. It was consequently only in the case of buildings which did not require a total abandonment of the prevalent style that Roman architecture was at first employed.

In accordance with the tendency of the age, ecclesiastical architecture, which had assumed such prominence during the prevalence of the Byzantine, Romanesque, and Gothic styles, was now thrown into the background, whilst the style of the Renaissance was brought to the front in the construction of castles and palaces. The varieties that occur in the style of the Renaissance are therefore not to be considered, as in the case of the previous styles, as the result of time and national peculiarity, but rather as the effects of individual and assumptive personal conceptions.

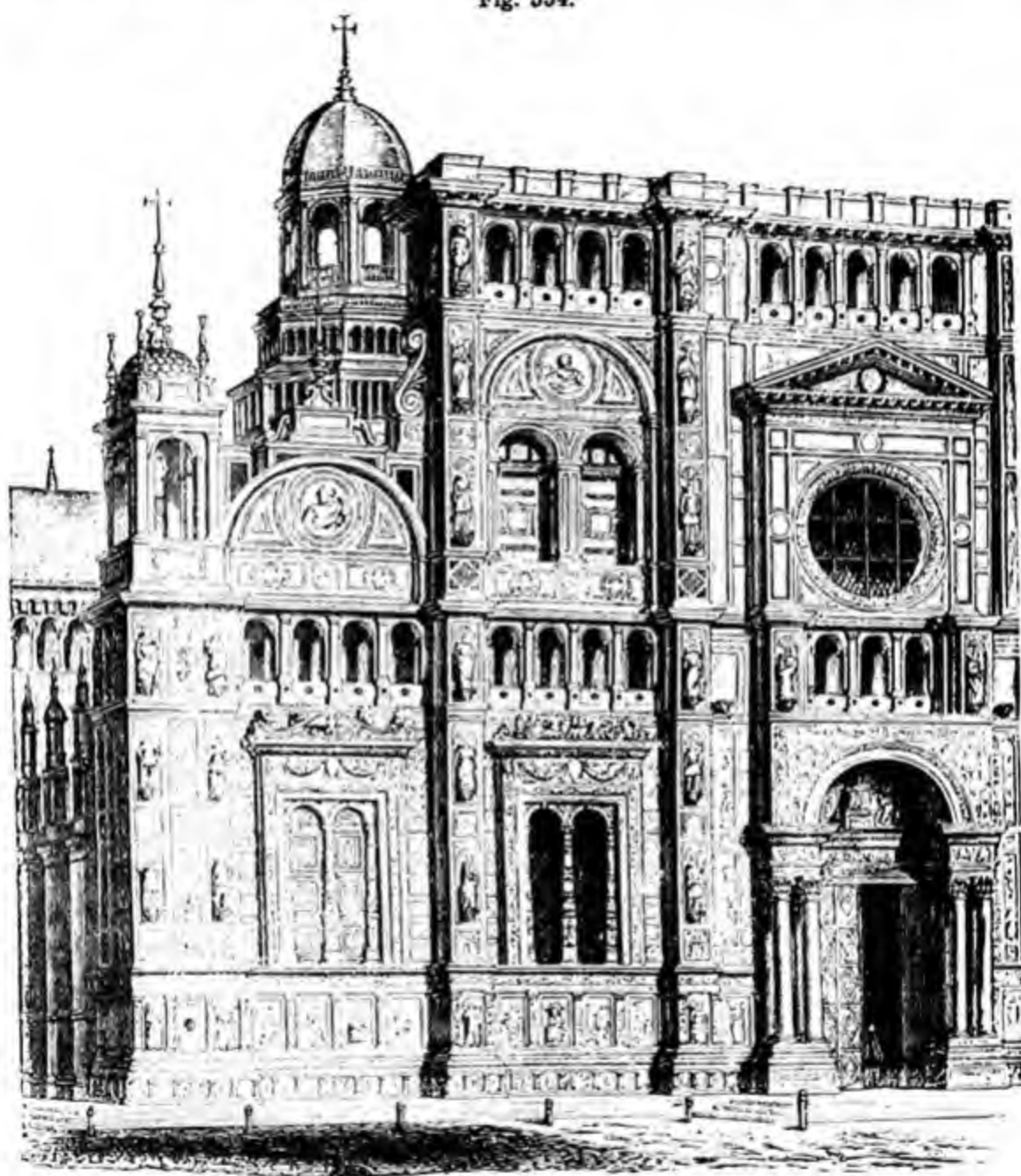
The first period of this modern style of architecture is also its brightest one. The façade of the Certosa at Pavia (Fig. 534) may be cited as the most notable instance. This was begun by Ambrogio Borgognone in 1473, and is very rich in sculpture; but the rest of the building, with the exception of the dome, which is also Renaissance, belongs still to the Gothic period.

During the early period the endeavour was maintained to adapt classical forms with more or less freedom to modern buildings, whilst later, that is in the sixteenth century, a scheme based on ancient architecture was universally prescriptive. Two distinct styles belong to this first period, each possessing its especial peculiarities. These are: The Early Florentine and Early Venetian Renaissance styles.

In the Roman Renaissance the system of the second period, which confines itself more closely to classical elements, is more prevalent. This Roman Renaissance was subsequently most widely

extended, and was introduced into Venice, and to a less degree into Florence.

Fig. 534.



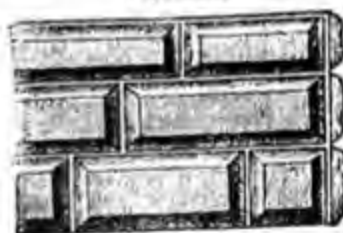
View of a portion of the Certosa at Pavia.

The invention of printing exercised a considerable influence on the development of this second system. The works of Vitruvius were translated into Italian and printed in 1521, and were soon

extensively circulated. Owing to the tendency and predilection for classical antiquity which were then beginning to be displayed, as well as to the scanty knowledge of Roman architecture which the world then possessed, it is not to be wondered at that these works soon came to be viewed as an authority. But although the writings of Vitruvius, and laws of architecture based on the classical monuments themselves, were considered as authoritative, still the traditional forms were employed in a new spirit and in a new manner. A striving for the picturesque is perceptible amidst the massiveness of the new style. At first this tendency was confined within discreet bounds, but after the first twenty years of the sixteenth century it was extended to an undue degree.

§ 348. The Pitti palace, which was constructed by Brunelleschi, may be considered as the lasting type of the Florentine Renaissance style, at least as far as the architecture of palaces is concerned. These palaces (as is shown by Figs. 537 and 538) are constructed in rustic-work, that is to say, of large blocks of stone with broad joints, of which, during the early period, only the splayed or rounded beds and joints were dressed, but at a later epoch these ashlar-blocks were more elegantly treated, and rustication was of more frequent occurrence. The effect of this bulky rustic-work is considerably heightened by its advancing prominently before the line of the façade; indeed this projection is often to the extent of from a half to a whole foot. The façade, which thus obtains an appearance of great solidity (Fig. 536), is terminated by a very massive and widely projecting cornice supported by consoles, and is pierced by windows with semi-circular heads and deeply-moulded architraves. The windows constitute a space which, being kept plain, forms a pleasing contrast with the heavy appearance of the whole façade, and a far from unharmonious effect being thereby produced, the building seems to be relieved and animated. The windows are divided by a small shaft into two halves, after the mediæval fashion, and these are both spanned by a semicircle over the impost of the arch of the whole window. Between these two

Fig. 535.

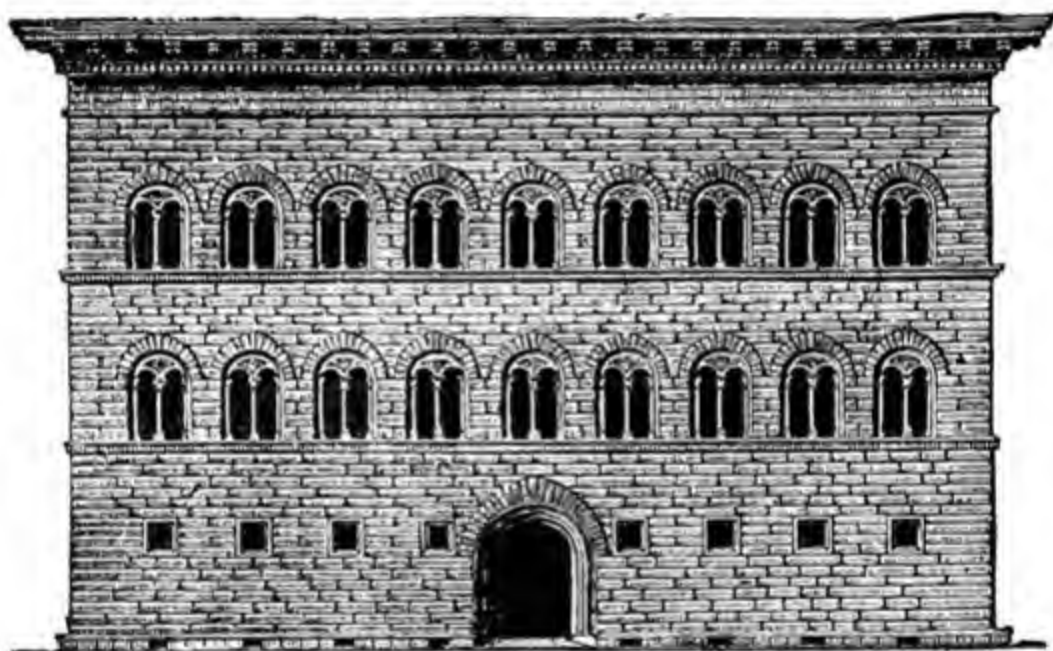


Bossage, or Rustic-work.

small semicircles and the main arch of the window there is generally inserted a circle, at the sides of which are formed small triangular panels, which are sometimes pierced with tracery work, or occupied with an enrichment of foliage, whilst at others the panels are left nearly plain.

An expression of great massiveness is the main characteristic of this Florentine style, which was principally applied in the architecture of the palaces. The forms which were borrowed from the Roman columnar construction do not in this style, as they do more

Fig. 536.



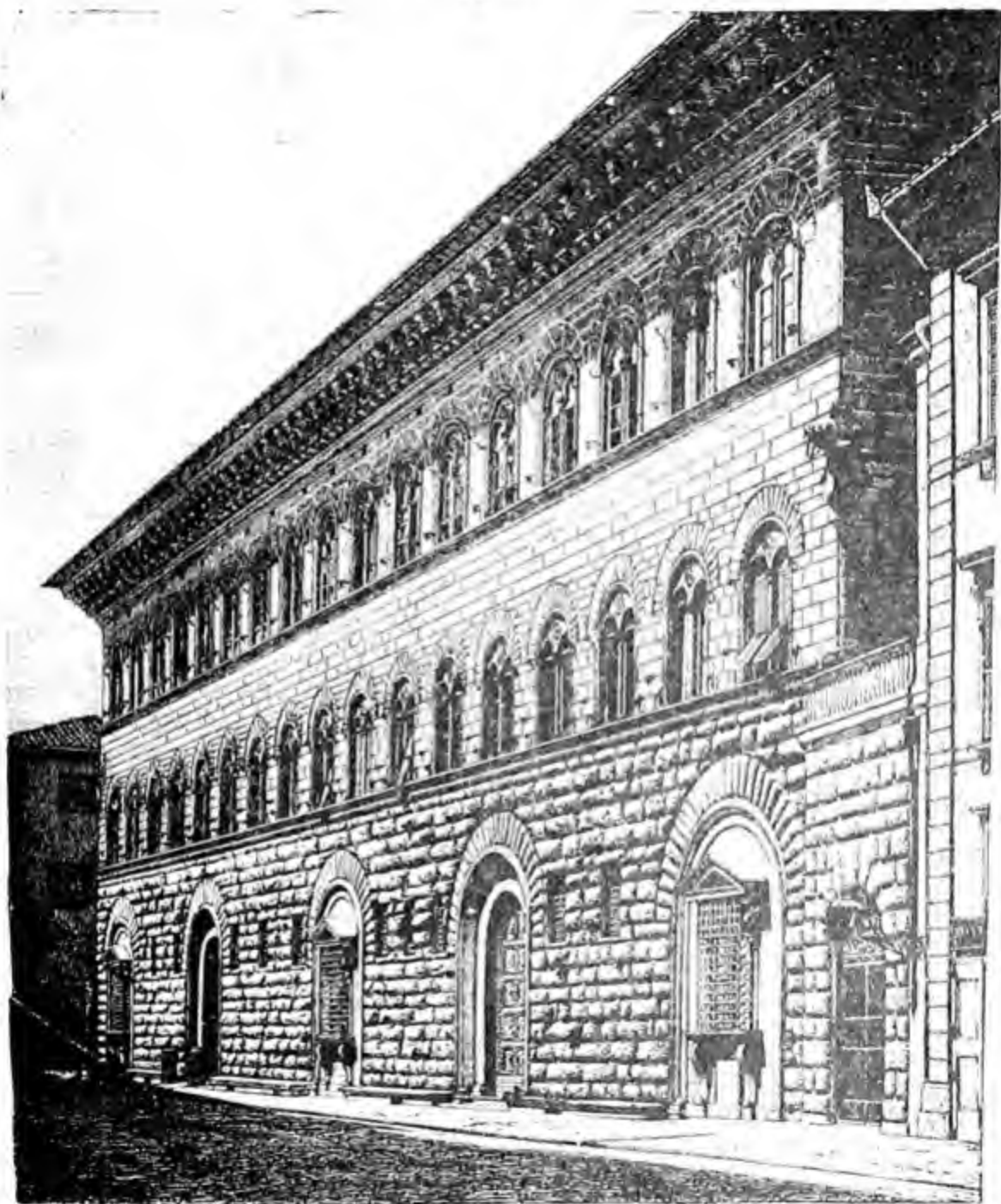
Strozzi Palace at Florence.

or less in the other styles of the Renaissance, constitute a pseudo-architecture. The massiveness, however, of the Florentine palaces conveys rather the notion of a fortress than of the mansion of a wealthy nobleman, and this impression is increased by the smallness of the windows in comparison with the rest of the building. This is especially the case with those façades which are entirely constructed of considerably projecting ashlar of irregular size, and to a less degree in the case of those the lowest storey of which alone displays these large undressed blocks (Fig. 537).

Those palaces which, like the back of the Strozzi Palace (Fig.

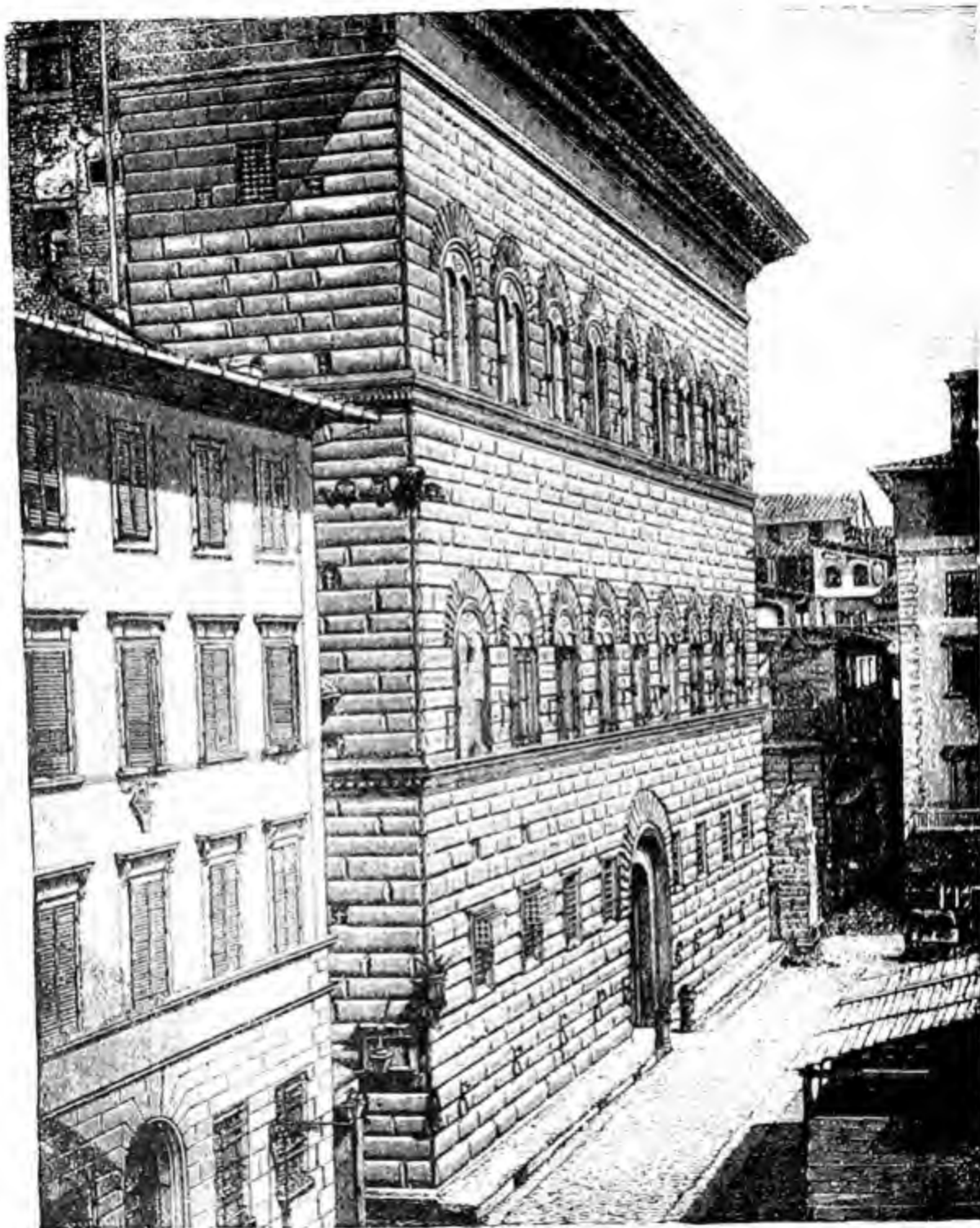
538), are constructed of dressed blocks with a less decided projection, present a more elegant appearance.

Fig. 537.



Riccardi Palace at Florence.

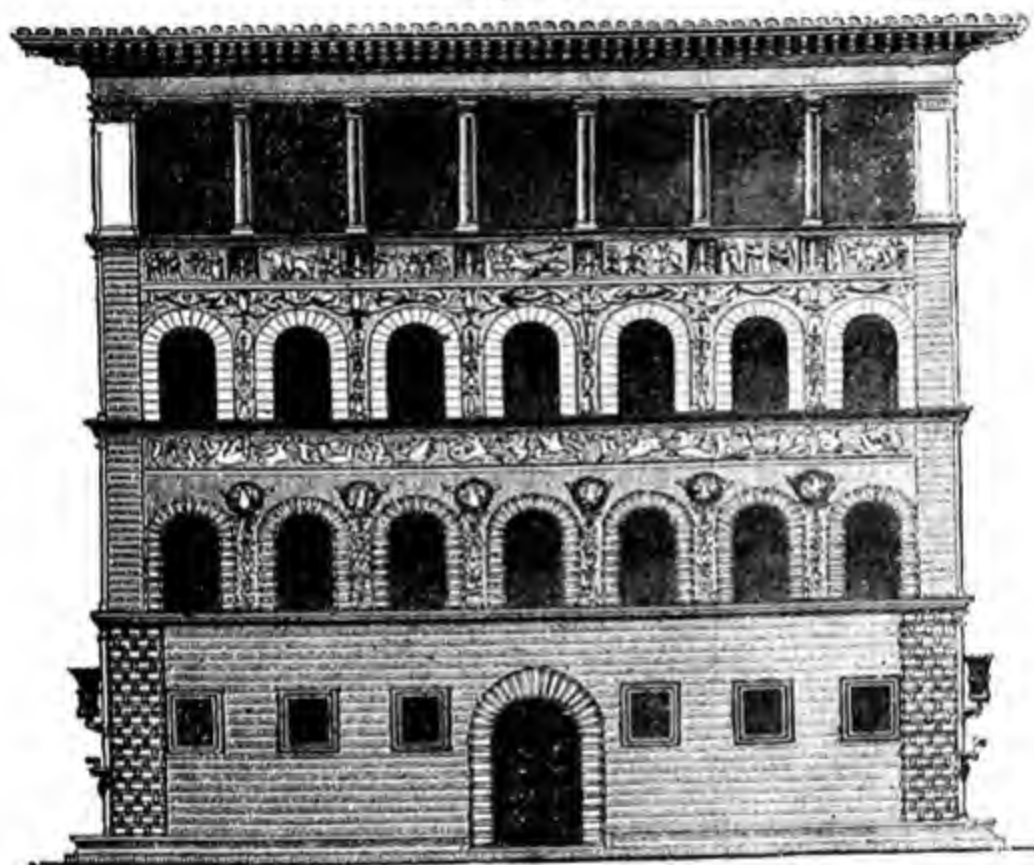
Fig. 538.



Strozzi Palace at Florence.

§ 349. The Florentine palaces which have just been alluded to are, generally speaking, less suitable than all other varieties of the Renaissance style for reproduction and imitation in the mansions and dwelling-houses of our aristocracy and citizens. At any rate important modifications would have to be carried out, such as a toning down of the too prominent masonry blocks, and the total avoidance of

Fig. 539.



Gaudagni Palace at Florence.

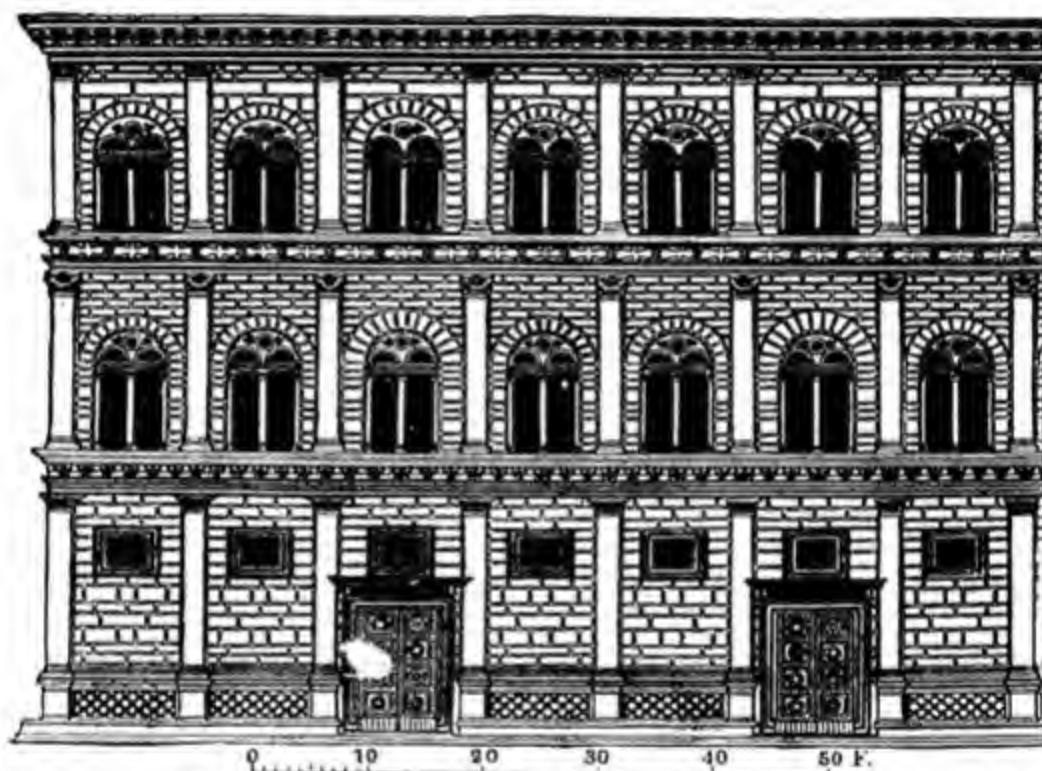
that roughness which must necessarily ensue from the employment of blocks of unequal size and arranged after an irregular fashion.

There exist, however, a few Florentine palaces of a smaller type, which externally present a more habitable appearance. In these rustick-work is not the all-important feature, but it is only employed for the quoins of the façade, though it sometimes extends to the whole of the ground-floor. The roof, which projects very considerably, and shows the wooden construction, is not in accordance with

the rest of the architectural features of the façade, nor is it supported by a strong enough cornice. Sometimes the upper storey forms an open arcade, as in Fig. 539. The figures and embellishments in sgraffitto which are introduced in this façade are not a necessary feature in these Florentine palaces. This method of ornamentation is also met with in exceptional instances in some of the Roman palaces.

The creations of Alberti form a class apart in Florentine palace

Fig. 540.



Part of the Façade of the Rucellai Palace at Florence.

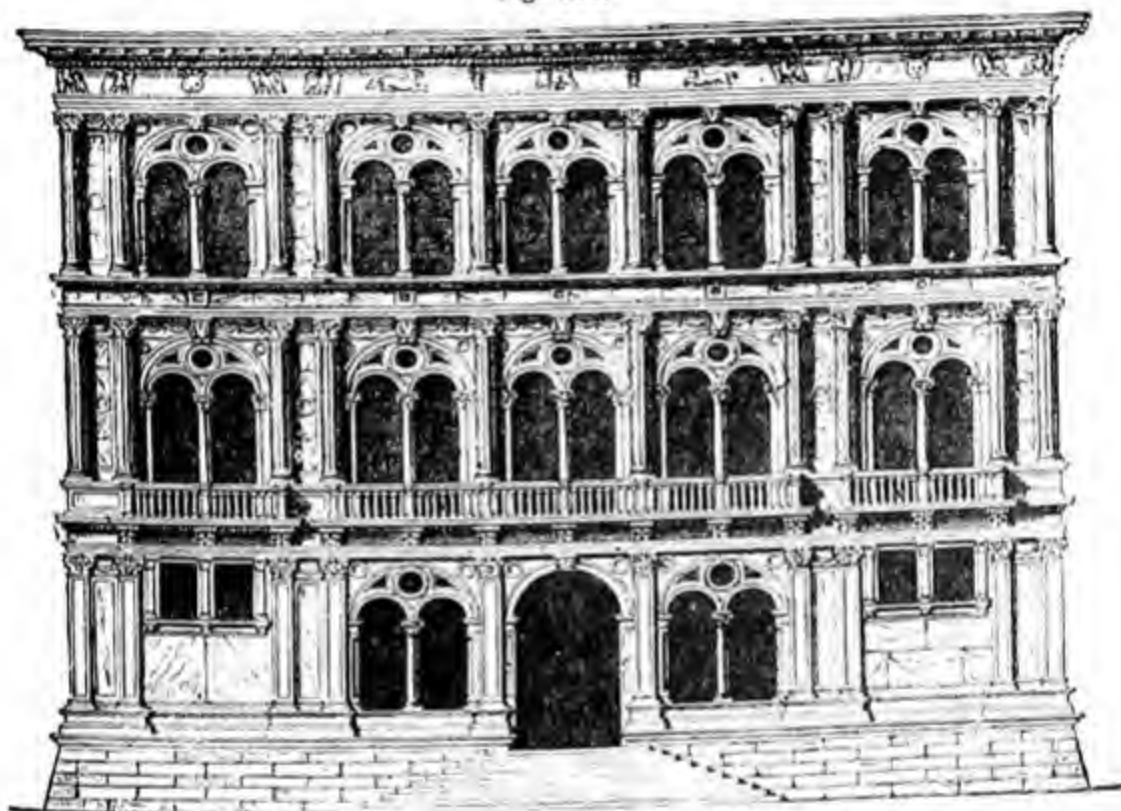
architecture, for they do not display the peculiarities of the Florentine style which have just been mentioned, but rather accommodating the forms of the antique to more modern requirements, they pointed out the road which was followed by the Roman Renaissance style, especially at the commencement of the sixteenth century. As will be seen from Fig. 540, these buildings are, to a certain extent, free from mediæval sympathies, and approach more closely to the classical models.

§ 350. The simplicity of the Florentine palace-architecture is

also displayed in the design of the vestibules, which consists either of a narrow passage covered with a vault and leading up to the staircase, or at the most of a gateway. Sometimes this defect is lessened by a small court being attached to the vestibule, as, for instance, in the case of the Gondi Palace, which was constructed by San Gallo.

During the early period of the Florentine Renaissance the simple

Fig. 541.



Vendramin Palace at Venice, by Pietro Lombardo.

basilica shape was generally chosen for churches, and the churches of San Lorenzo and San Spirito were constructed in this style by Brunelleschi; but subsequently, as elsewhere in Italy, the Roman vaulted forms, after the model of St. Peter's, in conjunction with the domical construction, were universally employed, even in the case of small churches.

§ 351. The Venetian Renaissance style first sprang into existence towards the end of the fifteenth century, and flourished till the close of the sixteenth. This style, like the Florentine, comprises various shades of difference, and is principally remarkable in connec-

tion with the architecture of palaces. The arrangement remains similar to the ancient Venetian system, as far as regards the internal distribution of spaces and the division of the façade into main groups, whilst the individual details, as, for instance, the columns and arches, are constructed in accordance with the Roman system. Whilst the Florentine palaces present an imposing appearance by their simple

Fig. 542.



Façade of the Scuola di San Marco at Venice ; now a Hospital.

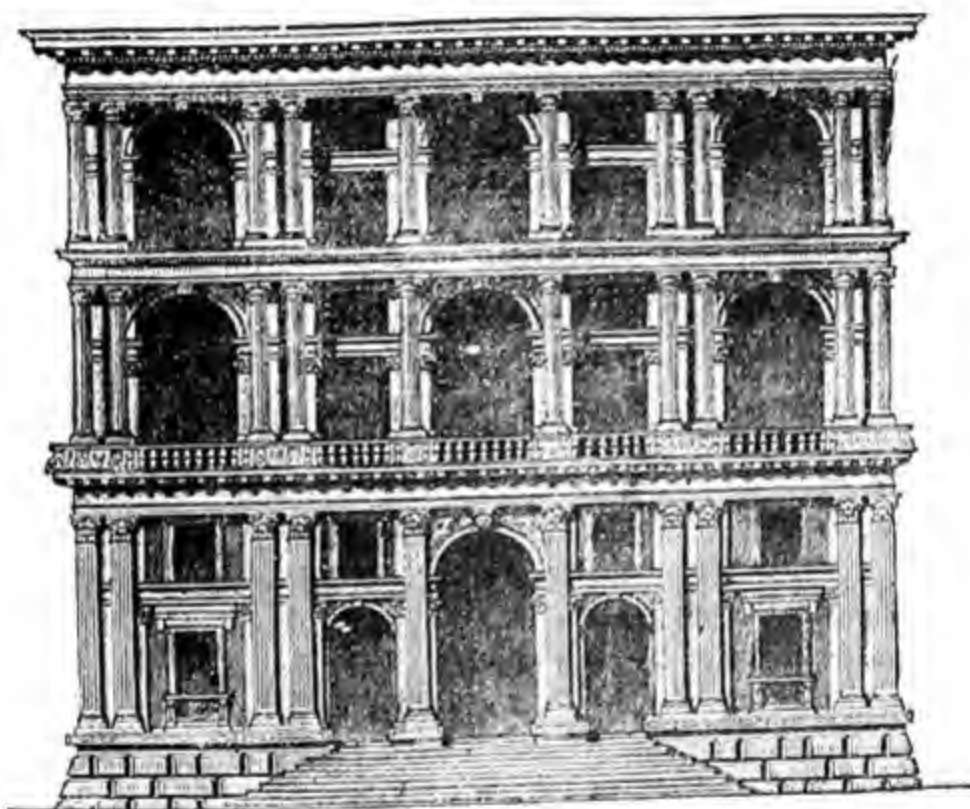
massiveness, and strike the beholder as severe and gloomy, the Venetian palaces, on the other hand, offer a striking contrast to the same by the elegance and richness of their architecture.

§ 352. A certain originality and freedom of invention is perceptible in the buildings of the early period of the Venetian Renaissance style; the old style is happily blended with the new, which

during this first stage is still imbued with Romanesque conceptions (Fig. 541).

A method of decoration is peculiar to these buildings which appears to have been borrowed from Byzantine models. Fine marbles of various colours, of which red porphyry and green serpentine are the most frequent, are inserted in circular and angular panels and borderings, and form a sort of mosaic-work. This style of ornamentation is employed both in churches and palaces, and gives a peculiarly

Fig. 543.



Grimani Palace at Venice, by San Michele.

rich and elegant appearance to the façades. Another peculiarity which was borrowed from the Byzantine style consists in the employment of semi-circular gables, both in churches, as in the case of the Santa Maria dei Miracoli, and also in public palaces, of which the Scuola di San Marco is a brilliant example (Fig. 542).

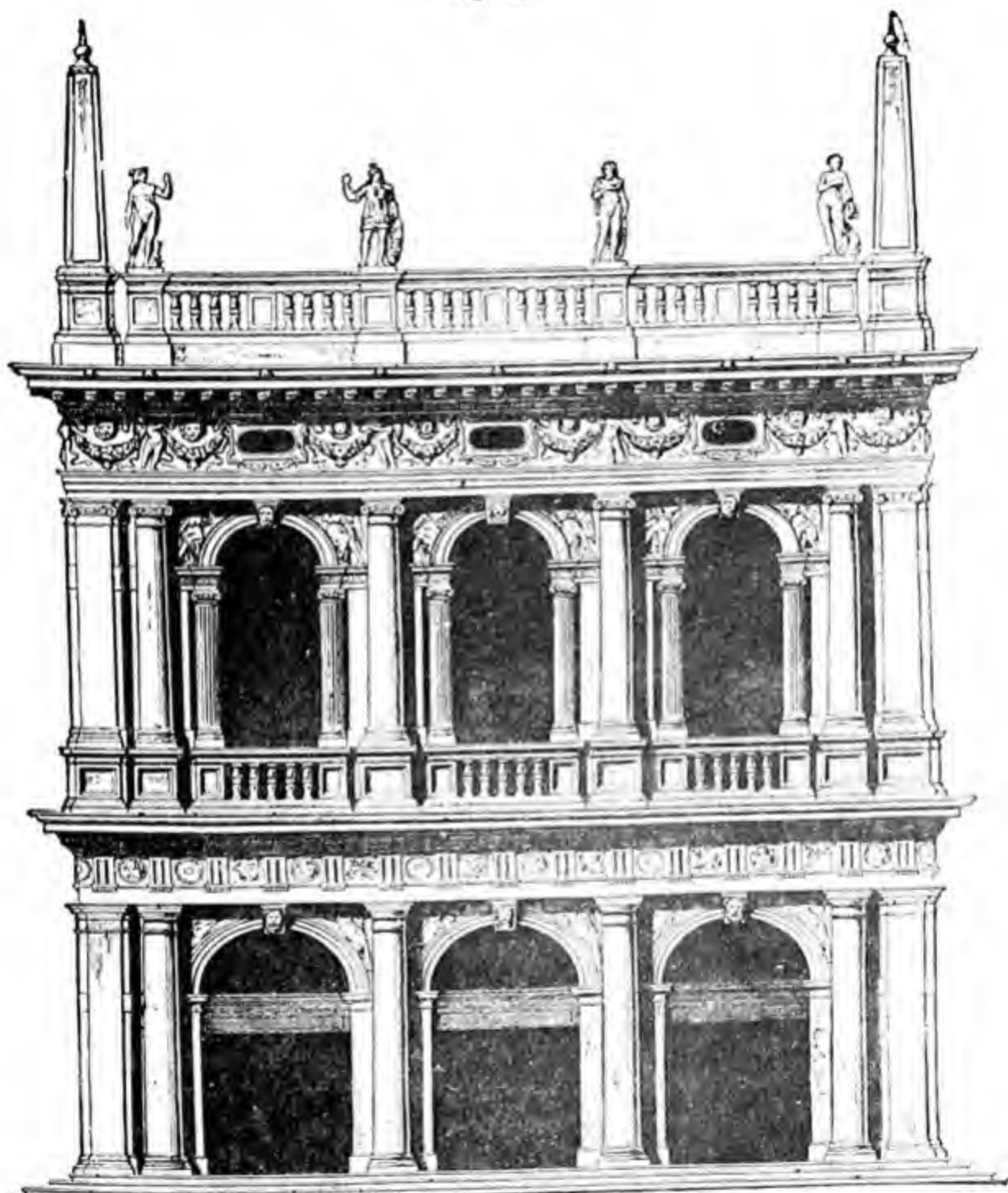
A beautifully picturesque effect is often produced in Venetian palaces by their effective composition, see Figs. 541 and 543

§ 353. In the first or transition stage of the new style, that is to

say, at the end of the fifteenth and beginning of the sixteenth centuries, the productions of Pietro and Martino Lombardo are especially noteworthy (see Figs. 541 and 542). A more determined imitation of Roman architecture is subsequently perceptible in the productions of San Michele during the first half of the sixteenth century. The conceptions of this architect had a considerable influence on his contemporaries and successors, and display a certain independence and originality (Fig. 543). Next in order are the productions of Jacopo Tatti, or Sansovino, who was born in 1479, and died in 1570. This architect was educated in the Florentine school, and afterwards proceeded to Rome; his masterpieces are less powerful and imposing, but on the other hand are more graceful, and display more richly developed details than those of San Michele (see Fig. 544). In these buildings, as well as in the Vendramin Palace by Pietro Lombardo, which belongs to the first period, the different storeys of the façade are ornamented by orders of half or three-quarter columns, which are placed at the sides of the openings, which themselves have semi-circular heads, and the façade is consequently less stiff and heavy than it appears in instances where Roman architecture was more strictly and decisively employed.

§ 354. Another modification of the style which conformed more closely to the Roman models and to the precepts of Vitruvius than the architecture which has been mentioned in the preceding paragraph, was shortly afterwards introduced by Palladio. It is consequently only in a local point of view that it can be designated as Venetian, because as regards style it falls under the category of the Roman Renaissance. Palladio, who became the special champion of this style of architecture, was born at Vicenza in 1518, and died in 1580. He was undoubtedly a man of great talent, and, after Michel-Angelo, exercised, perhaps, more influence than anyone else on architecture. Still the introduction of great confusion of ideas is attributable to this architect, for he adorned buildings of every kind and of most varied purposes and arrangement with classical temple portals, without taking into consideration their object or the requirements of the building as a whole, so that the order was frequently carried up through several storeys without any reference to its arrangement. But although these reproductions of columns and the

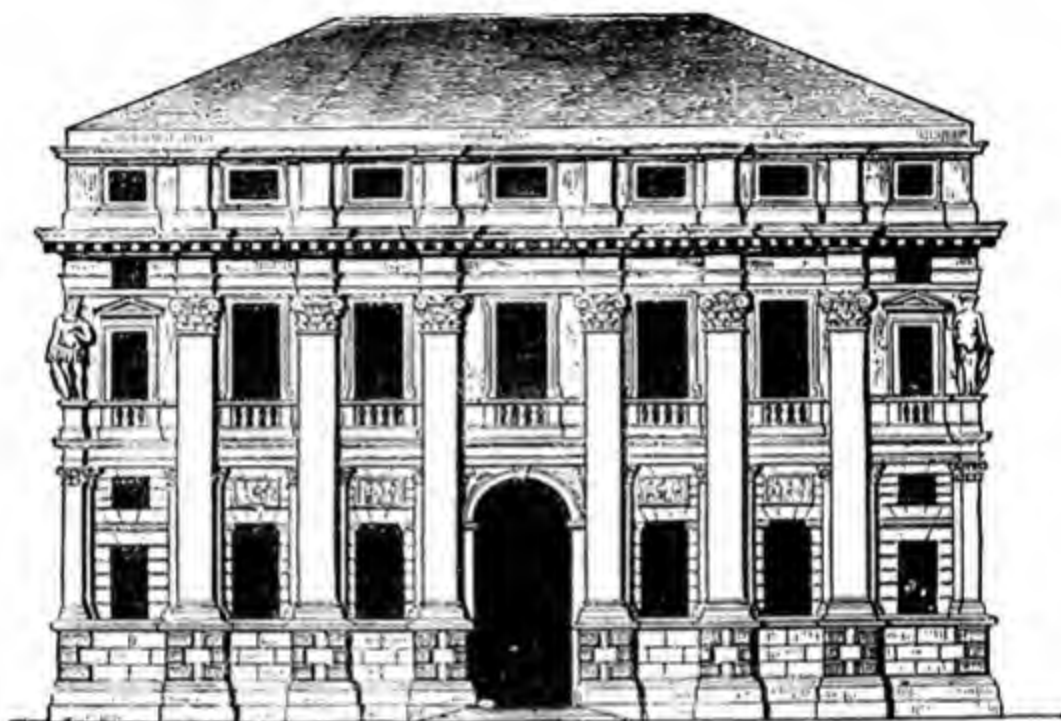
Fig. 544.



The Old Library of St. Mark at Venice, by Sansovino.

employment of pilasters were meaningless in themselves, they served, in a merely decorative point of view, to give a striking appearance to the buildings (Fig. 545).

Fig. 545.



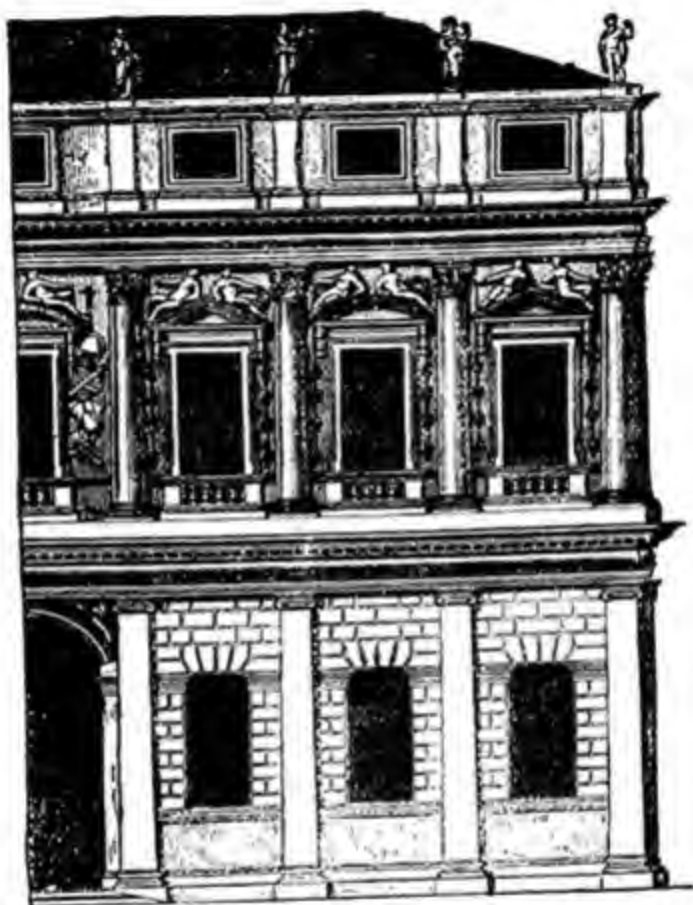
Palace at Vicenza, by Palladio.

The lower storey of palaces built by Palladio, the greater part of which are at Vicenza, is generally of rustic work, whilst the upper storeys have pilasters or a colonnade; occasionally, however, pilasters or arcades are introduced on the ground-floor (Fig. 546).

More than one cause served to render the compositions of Palladio so celebrated. He possessed an especial felicity in the arrangement of his ground-plans, particularly in instances where he had an unlimited space at his disposal. His command, moreover, of good proportion, rendered his combinations of civic and sacred buildings most pleasing to the eye; whilst the columnar arrangement of his entrances conveyed an agreeable, and at the same time, dignified impression (Figs. 547 and 548). Consequently the works of Palladio, although often composed of heterogeneous elements, remained for a long period the model for an entire style; and even in the eighteenth century, when the total deterioration of architecture, as exemplified

in what is called by the Germans "the Zopf-und-Perrücken Styl" (pigtail and periwig style), led architects again in the direction of the classical, the designs of Palladio became anew a subject of study. Even in the present day they are often immoderately praised by

Fig. 546.



Half of the Façade of a Palace at Vicenza, by Palladio.

those who are not really conversant with the principles and requirements of art, and who are ignorant of the history of the development of architecture.

The most noteworthy of the successors of Palladio at Venice were Scamozzi, and Longhena, the architect of the Della Salute church (Fig. 549).

Some of the churches of this style retain the Byzantine system of the Greek cross with barrel-vaultings and a central dome resting on four pillars or piers. Others, again, have the form of the basilica,

Fig. 547.



St. Saviour's, Venice, by Palladio.

Fig. 548.



Villa by Palladio.

but with a system of vaulting of their own, which produces a beautiful effect. This system consists of a series of large domes in the nave, and of smaller domes in the aisles, all resting on pierced masses of masonry with barrel-vaultings connected with them, as, for instance, San Salvatore.

Fig. 549.



The Della Salute Church and Custom House.

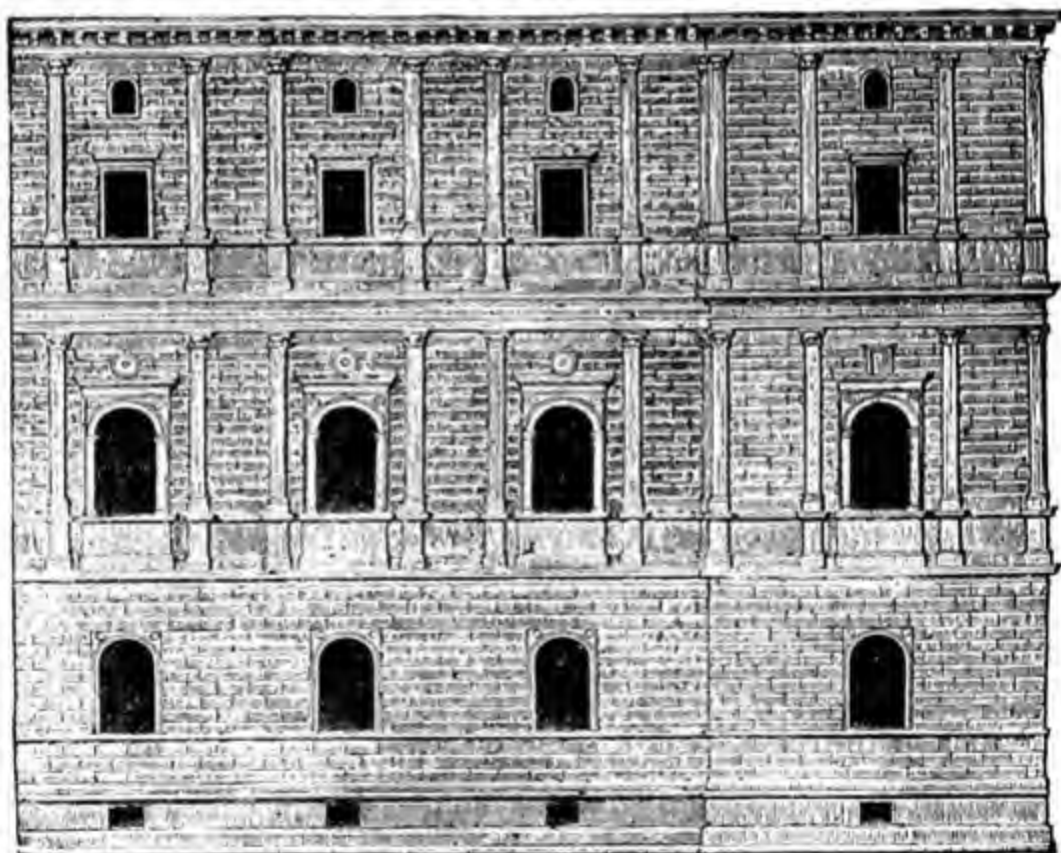
§ 355. Owing to the rarity and expensiveness of free-stone in Upper Italy, an architectural style in brick was developed side-by-side with that which has just been touched upon. This material had already been employed in the foregoing period for churches, and it now came into frequent use in the construction of the palaces.

arbitrary deviation was considered permissible, without the rules in question being totally abandoned. A dry method of treatment is the result, which contrasts unfavourably with the freer and more poetic transition period from the Romanesque to the Classical style.

At the period of the earliest development of the Roman Renaissance, free treatment, after the Romanesque method, is exhibited in a much less degree than in the Florentine and Venetian styles; but on the other hand the Roman Renaissance was from the commencement much more correct as regards its conformity to the ideas of ancient Roman architecture.

§ 357. The productions of Bramante himself, who was the first Roman architect of note, display two different tendencies, of which

Fig. 551.

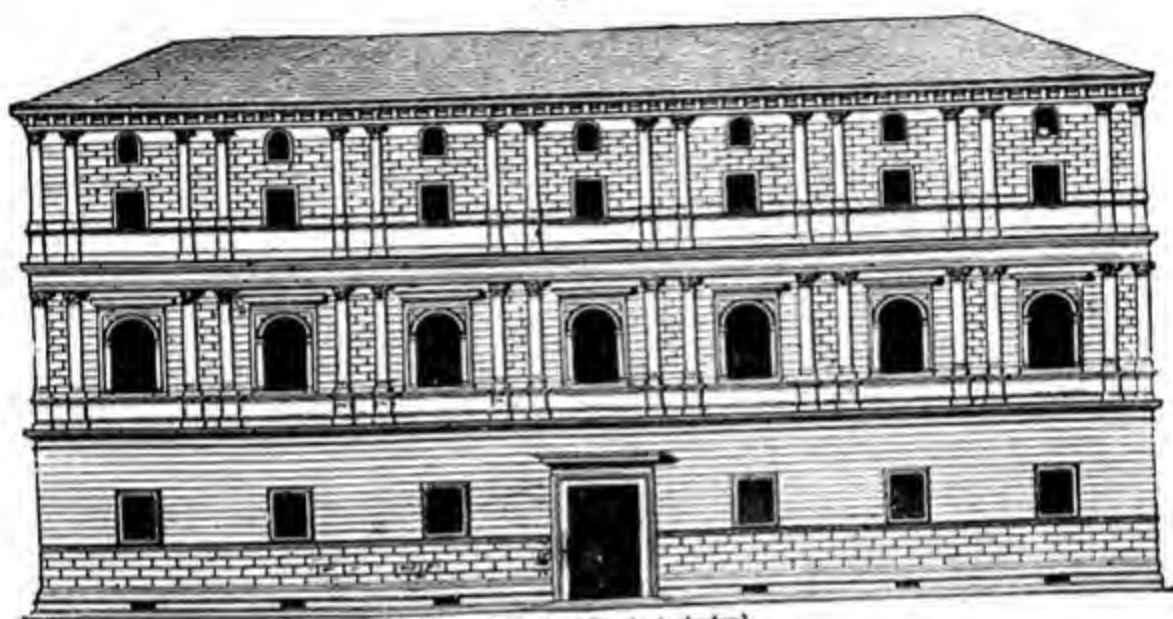


Part of the Façade of the Cancelleria at Rome.

the earlier, having its origin in Upper Italy, exhibits more originality together with Romanesque proclivities, as for instance the Choir of

the Church of S. Maria delle Grazie at Milan; whilst the later is more strictly in conformity with the antique; a result which was brought about by the architect's study of ancient Roman monuments.

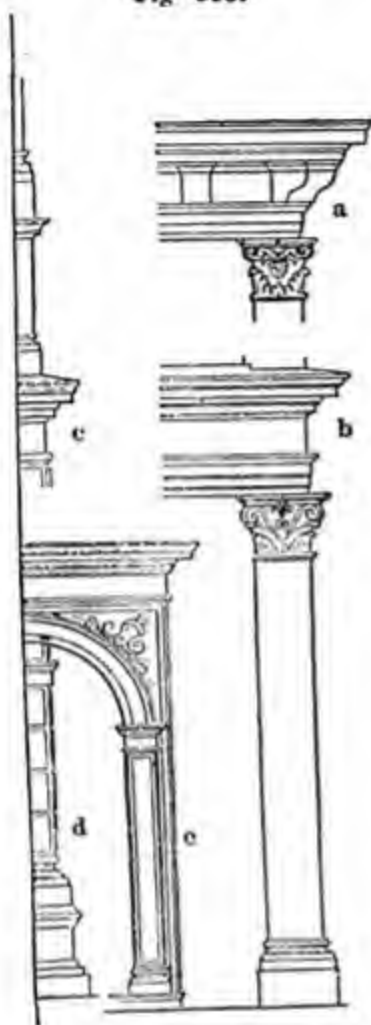
Fig. 552.



Giraud Palace at Rome.

The most remarkable productions of Bramante at Rome are the Cancelleria Palace (Fig. 551), with the Church of San Lorenzo in Damaso contained within its precincts, the Giraud Palace, now the Damaso (Fig. 552 and Fig. 553 with details of the same), and the Court of the Vatican, with the celebrated Loggie, decorated by Raphael. Bramante also drew the plan of St. Peter's, which was afterwards subjected to so many alterations. According to the original design, the church was to have been constructed in the form of a Greek cross, with each of the four ends terminating in a semi-circle, and with a central dome. In the severer forms of this architect's productions a poverty and insipidity is already discernible, which contrasts strongly with the more imaginative and poetic treatment of other structures which are remarkable for their gracefulness. A want of power in details is one of the most conspicuous of Bramante's failings, and this of course is more noticeable in his later productions,

Fig. 553.



Details of Fig. 552 on an enlarged scale.

when ancient Roman models were his study, than in his earlier works.

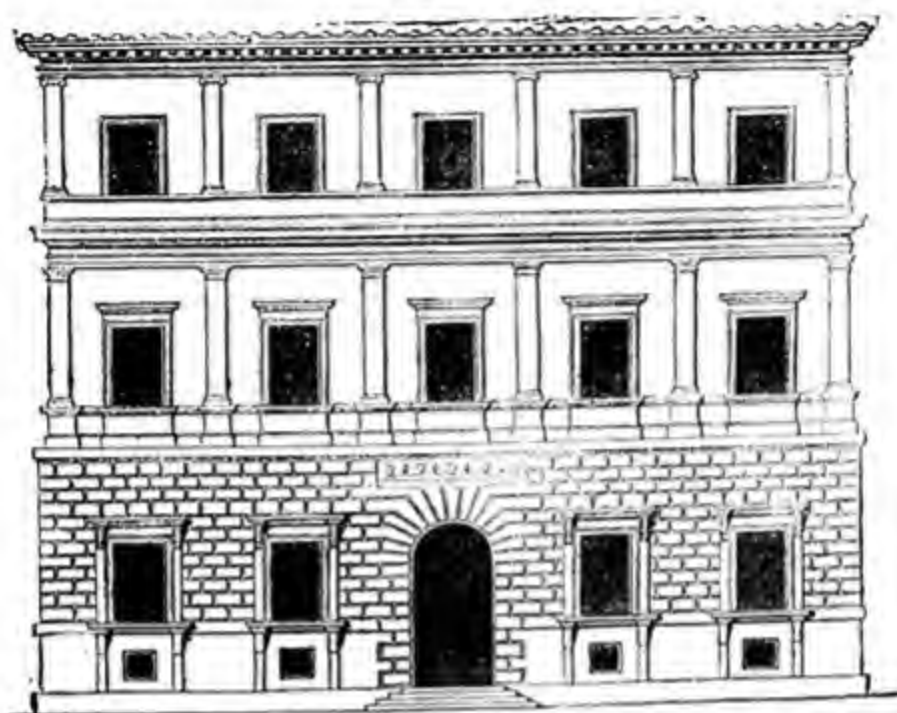
§ 358. The pupils of Bramante and other renowned architects pursued the path which he had marked out; as, for example, Balthazar Peruzzi (1481 to 1536, Fig. 554); as the principal of his works may be mentioned the Farnesina at Rome: Ant. di Sangallo of Florence (died 1546), whose principal work is the Farnese Palace at Rome (see Fig. 555, and parts of the same on an enlarged scale in Figs. 556, 557, 558). The third storey of this palace is, however, the work of Michel-Angelo. The Farnese Palace forms to a certain extent the type of a distinct class in the architecture of Roman palaces, and its chief characteristic is, that the façades are not divided by any orders of columns or pilasters, as for instance in Fig. 554; but the same effect and impression are produced by the architraves, cornices, and plinths of the windows, which invariably have rectilinear terminations,

as well as the doors, and also by the string-courses which divide the storeys, and by a far-projecting cornice: at the same time especial consideration is devoted to the effect of good proportions. Ornaments are but sparingly introduced; whilst, on the other hand, the corners are generally marked by rustications.

These palaces convey the impression of solidity without cumbersome, of richness without luxury, and above all, of simplicity in conjunction with dignity.

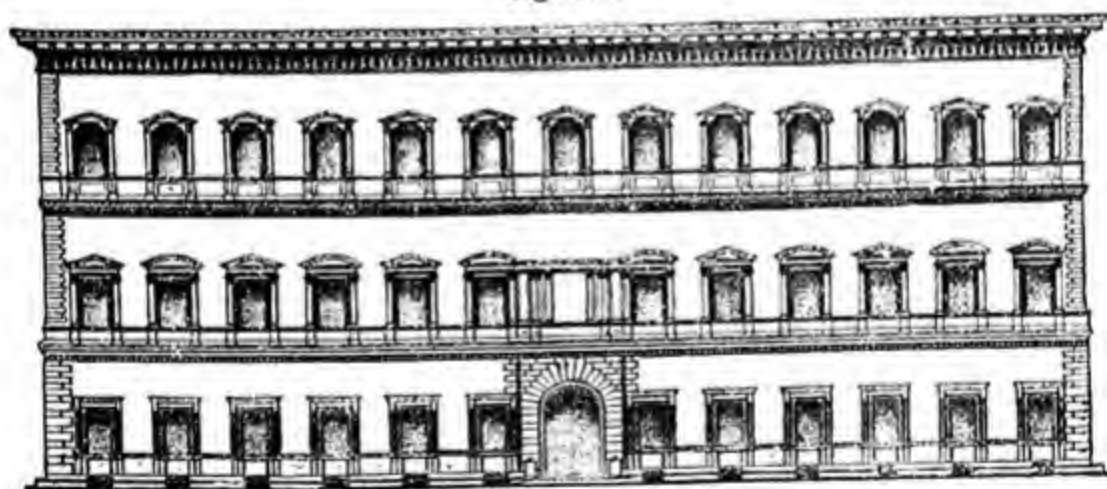
In the constructions of Bramante's nephew and pupil, the celebrated painter, Raphael Sanzio (1483 to 1520), there is perceptible a certain tendency towards picturesque effect and attention to detail;

Fig. 554.



Small Palace at Rome, by Balthazar Peruzzi.

Fig. 555.

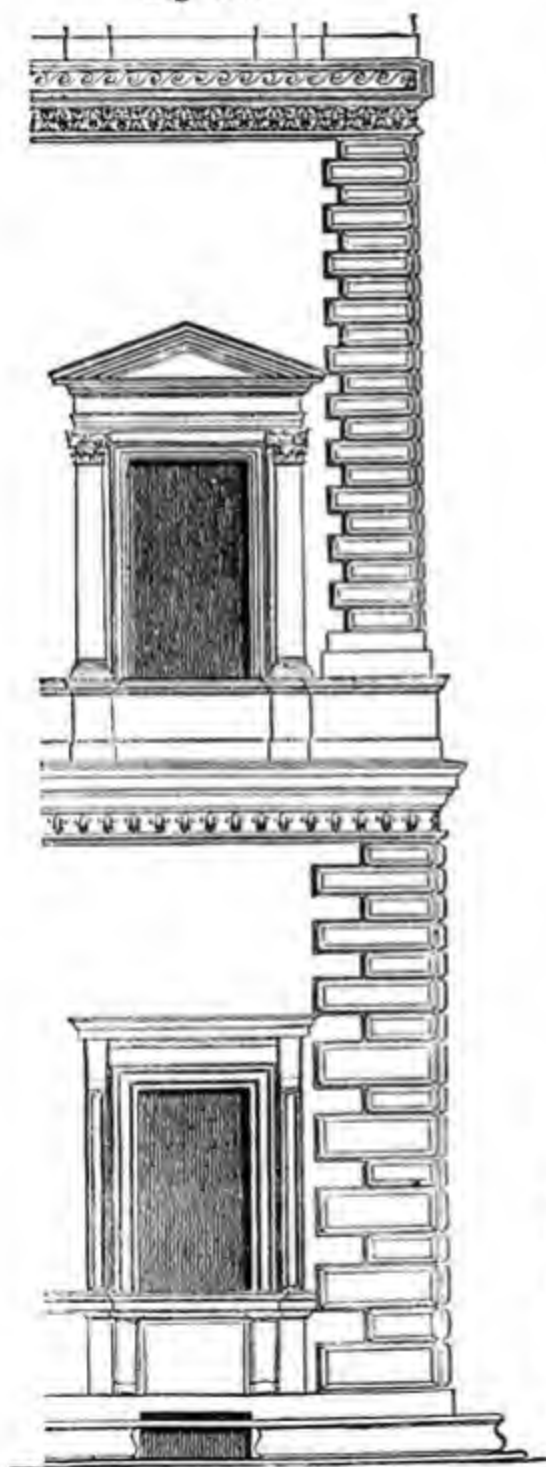


Farnese Palace at Rome.

this is evidenced in the palaces built by him at Rome, and especially in those at Florence: but this tendency is displayed with more freedom in the works of Raphael's pupil, Giulio Romano (1492 to

1546), who, amongst other works, was the architect of the Villa Madama at Rome, and the Palace Del Te at Mantua.

Fig. 556.



Portion of Fig. 555 on an enlarged scale.

Fig. 557.



Cornice of Fig. 555 on an enlarged scale.

Fig. 558.

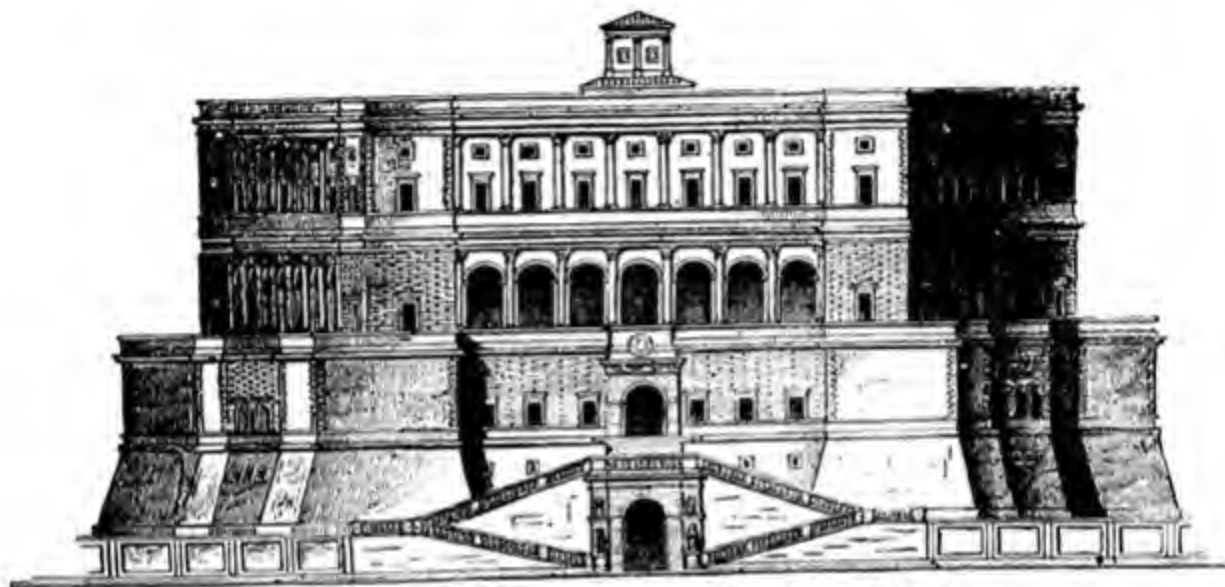


Window of the Upper Storey of the Facade of the Farnese Palace in Fig. 555.

§ 359. Another school, which displays a still stricter imitation of classical forms than that of which Bramante was the founder, was represented and advocated by Giacomo Barozzio, who is known under the name of Vignola (1507 to 1573). This architect, by his works and his teaching, exercised very great influence on his contemporaries

and successors, and the effect of his example is, like Palladio's, to be traced not only in the architectural bias of his own times, but also in the course of the eighteenth century. This result was principally brought about by means of his book on the five columnar orders of

Fig. 559.



Castle of Caprarola, between Rome and Viterbo, by Vignola.

antiquity, and this treatise has been regarded as an authority down to the latest times. His most noteworthy construction is the Castle of Caprarola, between Rome and Viterbo (Fig. 559).

§ 360. The third school was developed contemporaneously with the above by Michel-Angelo Buonarroti (1474 to 1564). This great genius had extraordinary and excessive views, and could not consequently accommodate himself without reservation, as his contemporaries did, to the principles and rules which had already found universal acceptance. His manner, therefore, of treating architectural forms savoured of arbitrariness rather than of conformity with constructive and æsthetic principles, and aimed more at picturesqueness of effect than at strictness of style.

Michel-Angelo assumed such a considerable and prominent position by his genius and authority, that his example necessarily entailed imitation and produced effects on subsequent times. When his

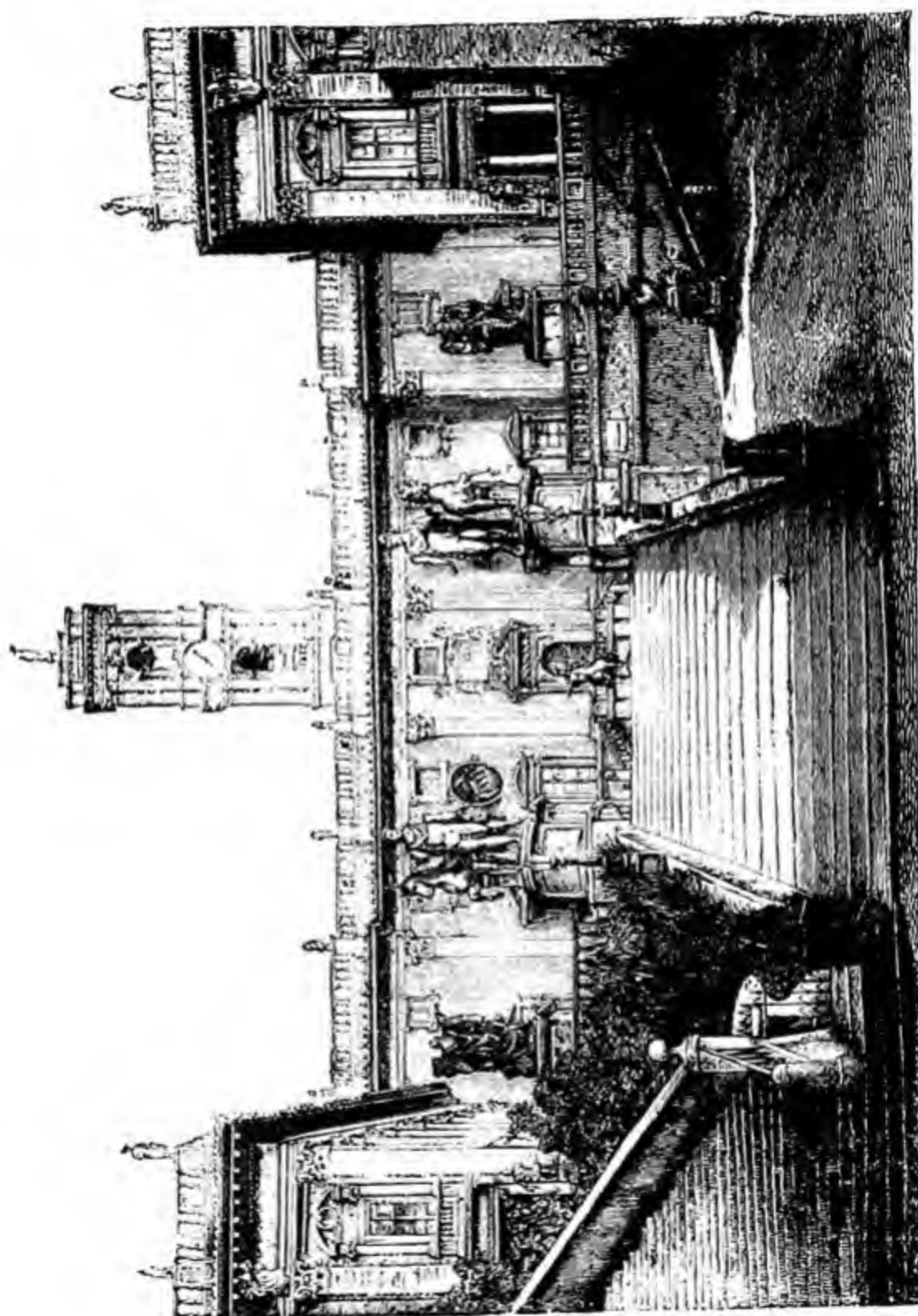


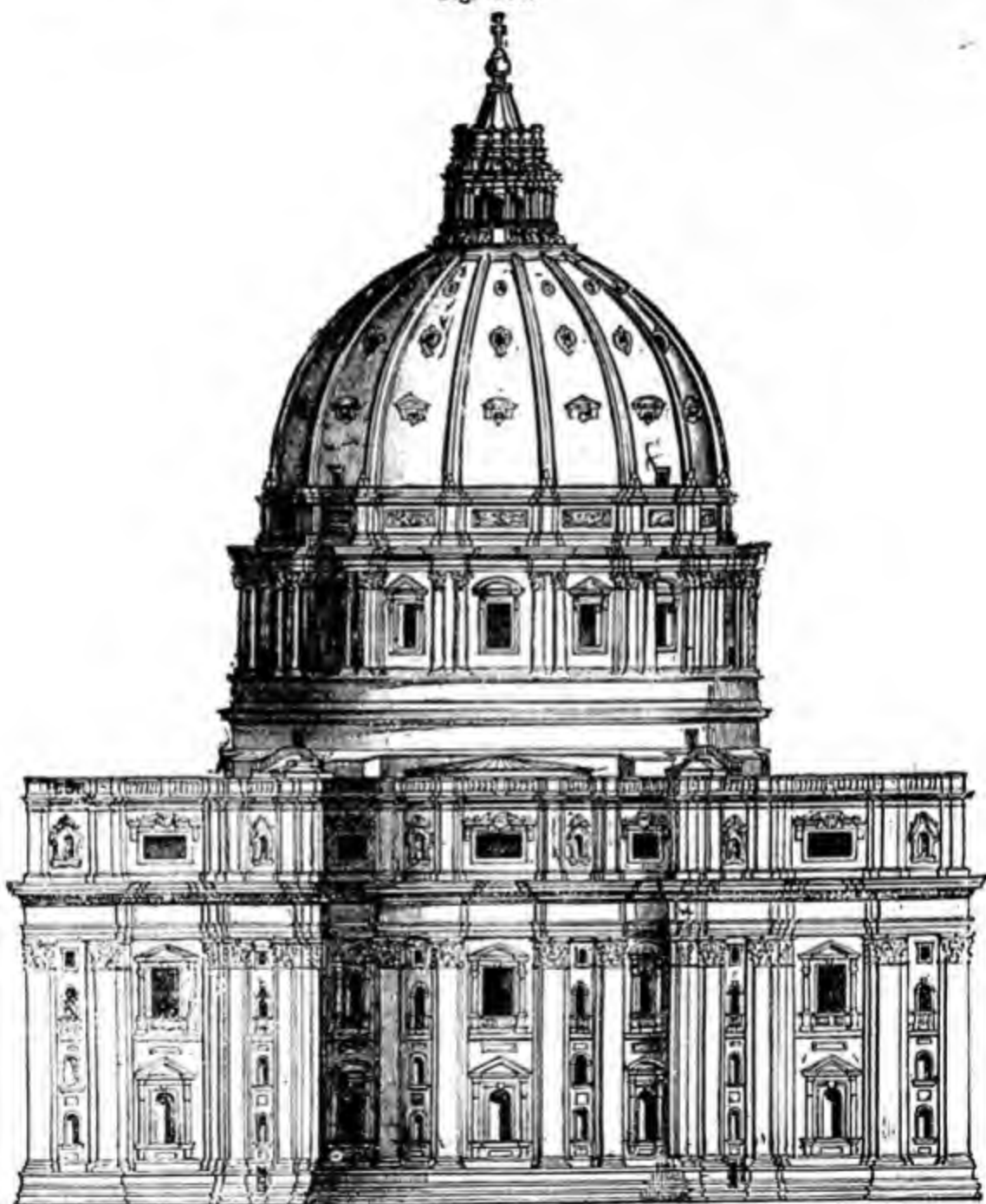
Fig. 560. The Modern Capitol at Rome, with the Two Wings constructed by Michel-Ange.

deviations were moderate, they were considered by his imitators merely as marks of the originality of his wonderful talent, and by this means proved stepping-stones to the degeneration which marked the ensuing period of the Roccoco style. Amongst his architectural works, the design of the Capitol at Rome, with its wings (Fig. 560), may be considered as the most pleasing, whilst as a testimony to his lofty genius the mighty and glorious dome of St. Peter's at Rome (Figs. 561 and 562), which has no rival in the world, must be adduced as a striking instance. This dome was only completed after Michel-Angelo's death. Both as regards its colossal dimensions, as well as its beautiful proportions and lines, it produces, both internally and externally, a most wonderful impression. It should be remarked that Michel-Angelo, like Bramante before him, selected the form of the Greek cross for his church, and planned the dome accordingly, and that the nave, which is by Carlo Maderno, is, both externally and internally, prejudicial to the effect of the dome (see Fig. 563).

§ 361. Though the individual productions of the above-mentioned architects naturally differed from each other, yet the palaces of the Roman Renaissance have this in common, that they all convey the impression of marked dignity and of size in conjunction with simplicity. The most important of the causes that conduce to this result are the proportions and large dimensions. The mouldings and other architectural details are clearly defined, but not so prominent as in the Florentine palaces, and for the most part traced upon purely classical Roman principles. This remark is applicable to the earlier period of the Renaissance, for in the later period the bent, broken, and twisted forms which occur, especially in the jambs of windows and their pediments, differ entirely from those of antiquity. But the palaces which belong to the good period of the Renaissance are, in fact, isolated examples, as the above-mentioned buildings by Bramante, Balthazar Peruzzi, and some others. The Farnese Palace, by Antonio Sangallo, which is the most imposing in Rome, must be considered as a solitary exception to this rule. This palace would represent the Roman palatial style in the most complete manner were it not for the fact that the third storey, which was designed by Michel-Angelo, detracts so greatly from the façade by its windows, which are in the Roccoco style, and do not at all suit

the others, that the harmonious unity of the whole is seriously impaired. The desire of novelty, and the abandonment of traditional

Fig. 561.

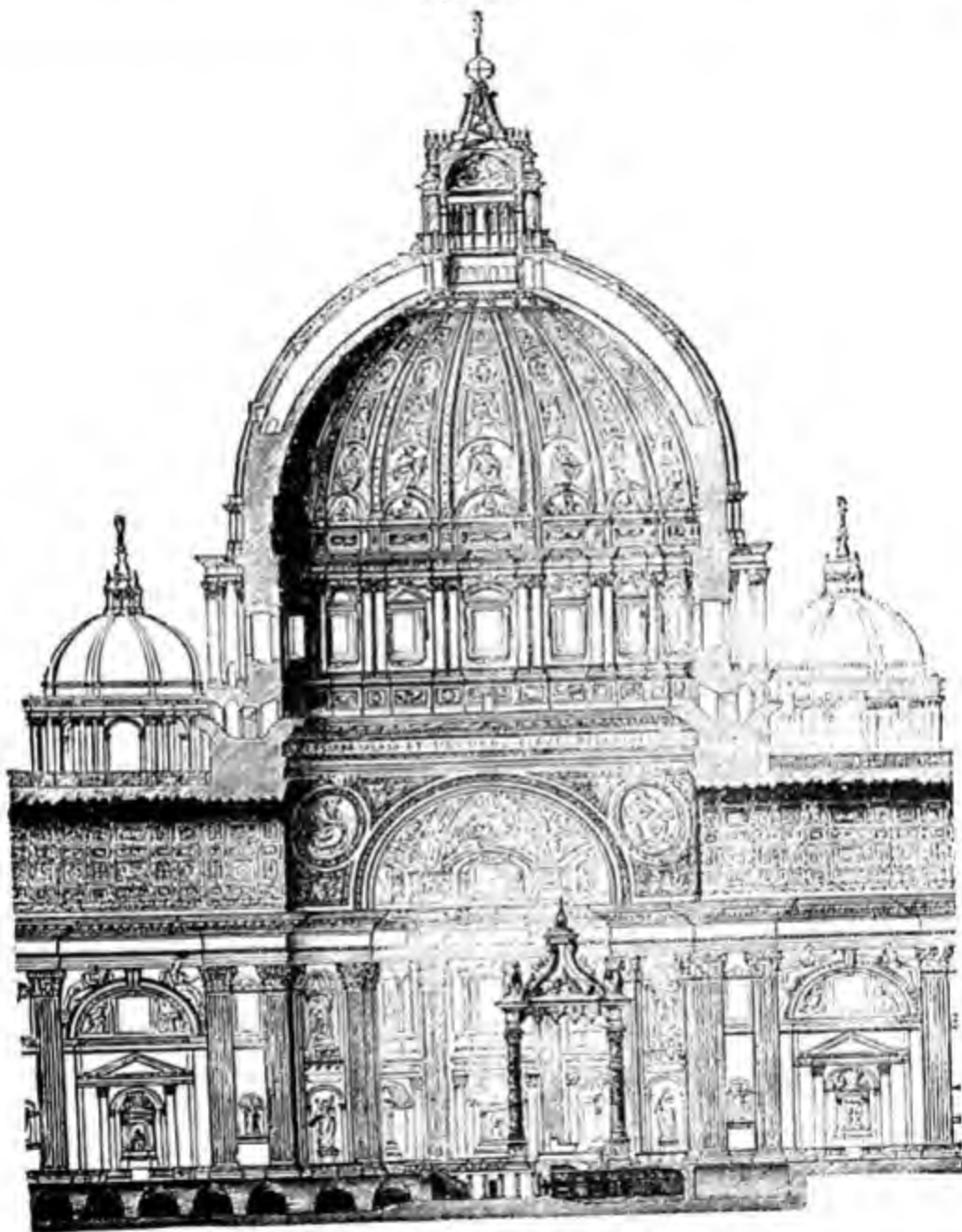


Back View of St. Peter's, Rome.

laws, have, in this instance, clearly given rise to a fault. Not only is it open to censure that the semi-circular heads to some of the windows

lack uniformity with the rest of the building, in which horizontal lines are predominant, but even the treatment of their architraves, &c., is

Fig. 562.

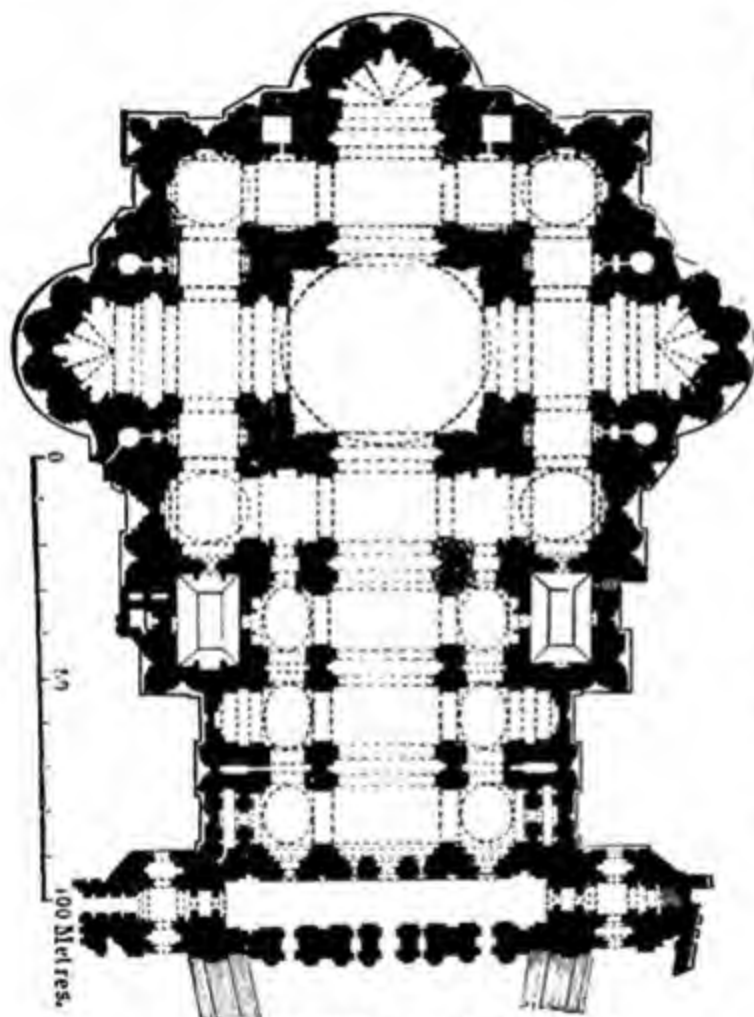


Section of the Dome of St. Peter's, Rome.

very ill-judged, mainly owing to the fact that through a deficiency in height the arches of the windows have been carried up to the hori-

zontal line of the pediments, and that consequently the horizontal architrave and frieze of the window entablature had to be abandoned (see Fig. 558). The worst of the characteristic mistakes of the decadence of ancient Roman architecture are, moreover, here introduced anew,

Fig. 563.



Ground-plan of St. Peter's, Rome.

namely, the introduction of columns which do not rest on the ground, but which are supported by brackets, and which support architraves with a profile which coincides with that displayed by the debased profile of the decadence architecture.

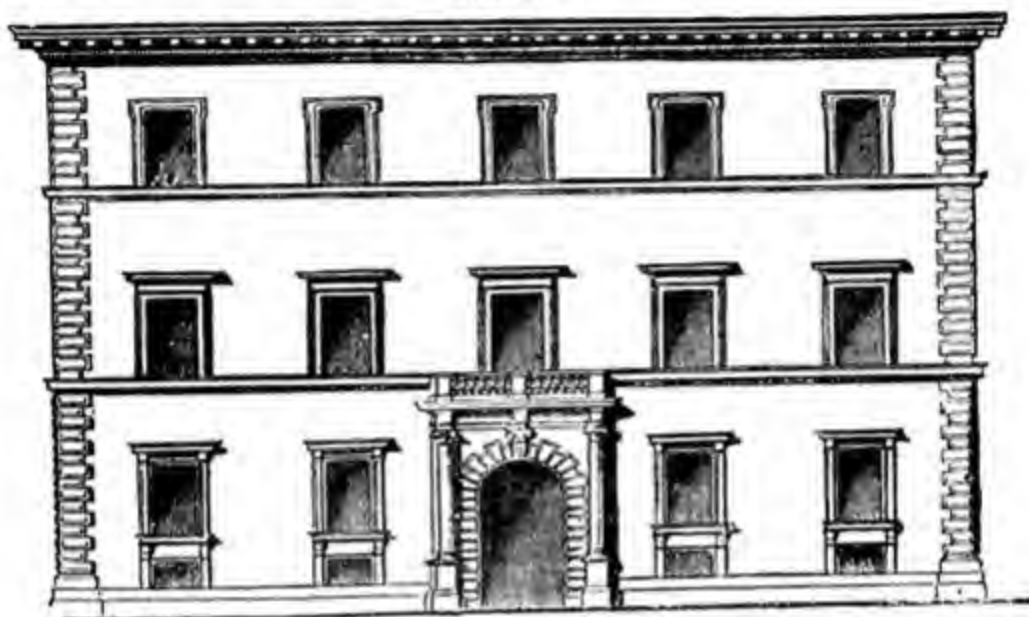
Fig. 564 presents a type of the majority of the palaces of the Roman Renaissance style, at least so far as regards the architectural features and their arrangement; for the most important palaces in this style are both more imposing by their

great length, whilst at the same time they are less simple and less correct in their details.

The Roman palaces are for the most part without any important sculptural accessories, and without ornamentation, unless an exception be made as regards the decorated mouldings of the cornice, which is generally Corinthian: such enrichments are usually ovoli, dentils, and consoles. It is the very simplicity of the Roman palaces, in

conjunction with their vast dimensions, which gives the impression of dignity. If this style is applied to our modern dwellings with their curtailed dimensions, more ornamentation is requisite than was

Fig. 564.



Verespi Palace at Rome.

the case with the vast Roman palaces, for otherwise the impression would be feeble and uninteresting as soon as the effect produced by the extent of the structure was wanting.

§ 362. The vestibules are generally spacious, but still they do not produce the impression which is conveyed by a richer style of architecture. A more pleasing effect might have been attained by the employment of columns where now heavy pilasters support the vaults of the vestibule. The arrangement, however, of the vestibules and courts is carried out with some view to picturesque effect: sometimes there are colonnades, while at others they are wanting; niches with statues are introduced opposite the entrance; whilst a fountain at the background of the first court, or still more effectively at that of the second, is seldom wanting. The perspective effect is naturally increased by these courts. It is rarely that the staircase is included in the first *coup d'œil*, it is usually placed at the side, and behind a gallery. The remaining space of the ground-floor is generally taken up with stables and coach-houses

Fig. 565.

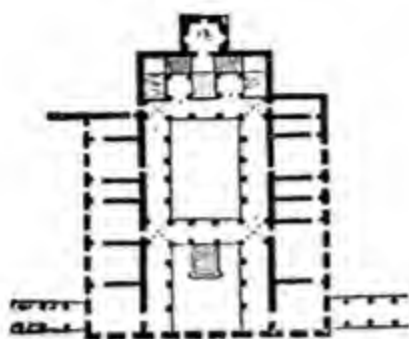
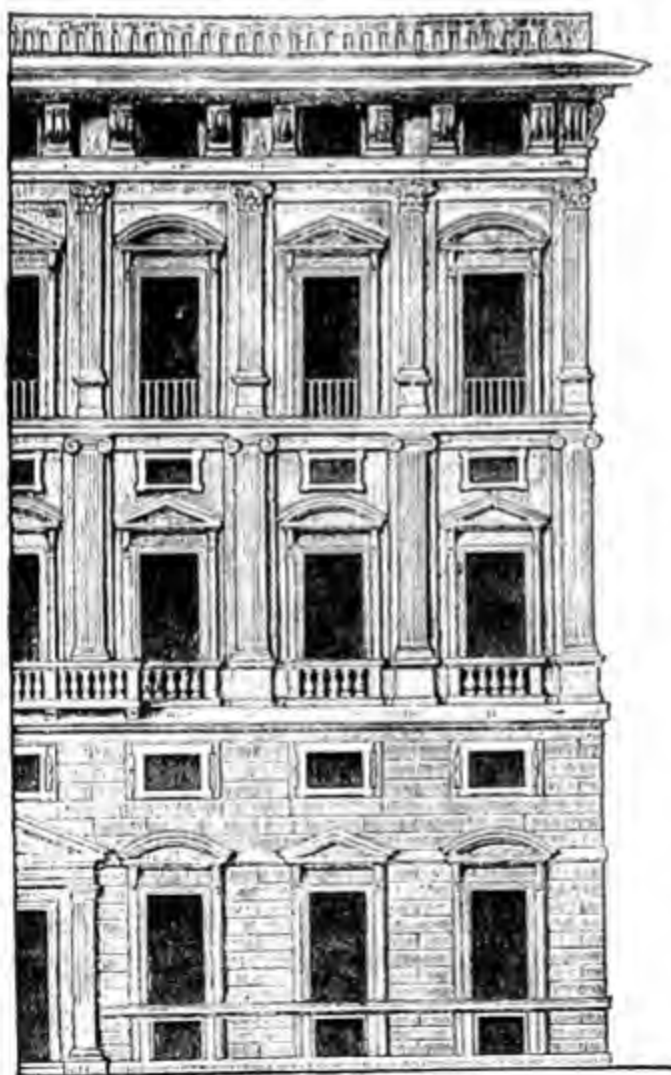
Plan of the Tursi-Doria Palace
at Genoa.

Fig. 566.



Half the Façade of a Palace at Genoa.

and other subordinate appliances. The rooms which are used for ordinary or state purposes are on the first-floor, whilst the second-floor is appropriated to the same purpose, and between or below is the *entre-sol*, or *mezzanine*, which generally has windows of a square shape.

§ 363. The buildings of the sixteenth century at Genoa form a distinct species of the Modern Roman style, mainly owing to the fact that they were designed by one single artist, Galeazzo Alesso (1500—1572). They are large palaces, which bear an independent character and differ from those of other towns, especially in the arrangement of the interior. The uneven and circumscribed nature of the ground on which they are built is mainly conducive to this, and picturesque and imposing effects are skilfully produced

by the arrangement of the vestibules, halls, and steps (Fig. 565). In this respect the palaces of Genoa are unrivalled, for the Florentine palaces, as well as the Venetian, are entirely wanting in such vestibules. At Rome, on the other hand, where the palaces were

Fig. 567.



Façade of the Tursi-Doria Palace at Genoa.

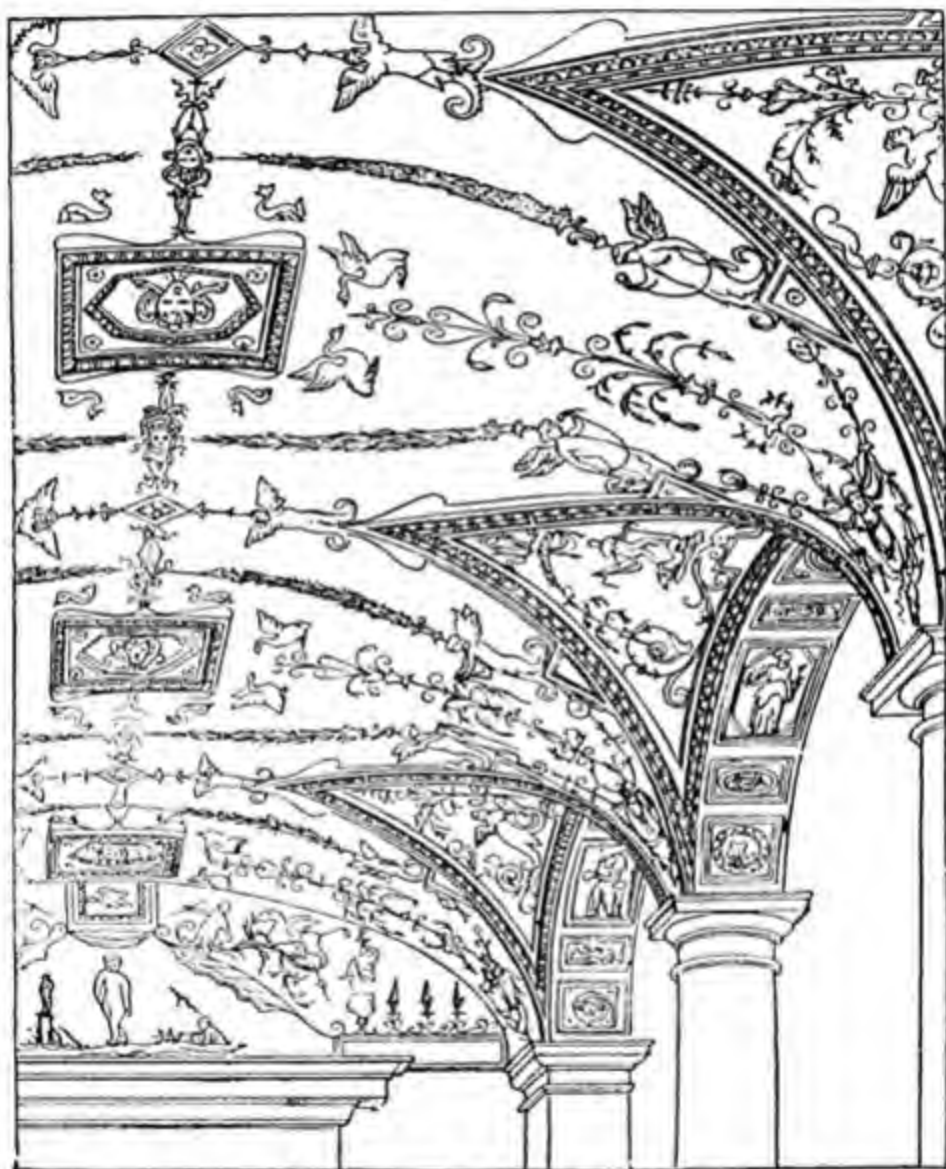
not restricted by want of ground, and where the vestibules and courts assume even larger dimensions than at Genoa, no such picturesque effects of light and perspective are produced as, in the latter city, rise from the architecture itself, and from effects of perspective and light and shade.

The purity of style, however, of the Genoese palaces is not so great as in the Roman, particularly as regards the heavy, ungraceful forms of details. This is shown by Figs. 566 and 567, and there are other instances in which the faults are more marked than in the palaces in question. The palaces of Genoa may, however, be favourably contrasted with the Roman as regards height; for the ground-floor and the mezzanine are raised considerably, in order to gain more light and a better view from the main storey. Owing, however, to the extreme narrowness of the streets and the consequent difficulty in obtaining a satisfactory point of view, the object is not obtained to the desired degree.

§ 364. The decoration of the interiors of the buildings of the Renaissance is also copied from ancient Roman architecture. The rooms are either vaulted or have flat ceilings, but in both cases they are adorned with paintings after the manner of those

discovered in the Baths of Titus, as is shown in Fig. 568, or by panel-work, that is, sunken coffers with a regularly distributed enrichment (Fig. 569). These panels are themselves often adorned with historical or allegorical paintings, or with arabesques. Ornamented

Fig. 568



Painted Vault of the Florentine Palace in Rome.

panels were employed in large palaces for horizontal ceilings, as also in churches, though in the latter case they were more often applied to cupola vaultings, as notably in St. Peter's (Fig. 569).

Amongst other details, a type of composite capital is worthy of

notice, because it is of very frequent occurrence, with but very slight modifications (Figs. 570, 571, 572). During the later period

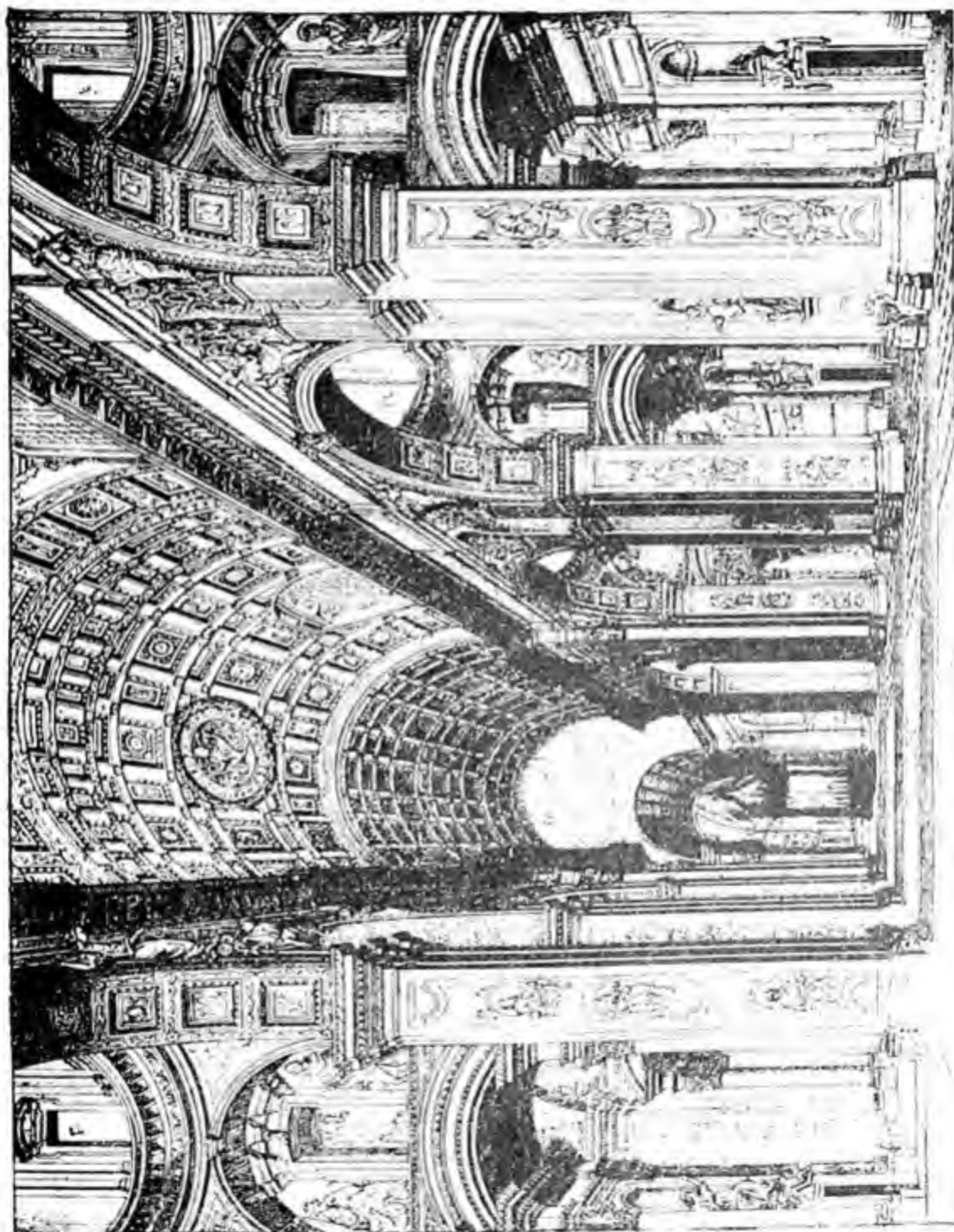


Fig. 572. Interior View of St. Peter's at Rome.

of the Renaissance style a very extensive application of a kind of carved scutcheon was prevalent; the ends were generally rolled up in imitation of parchment (Figs. 573 and 574).

Fig. 570.



Capital of a Pilaster from Venice.

Fig. 572.



Portion of a decorated Pilaster with Capital, in the Church of Santa Maria dei Miraculi at Venice.

Fig. 571.



Capital of a Pilaster from Florence.

Fig. 573.



Fig. 574.

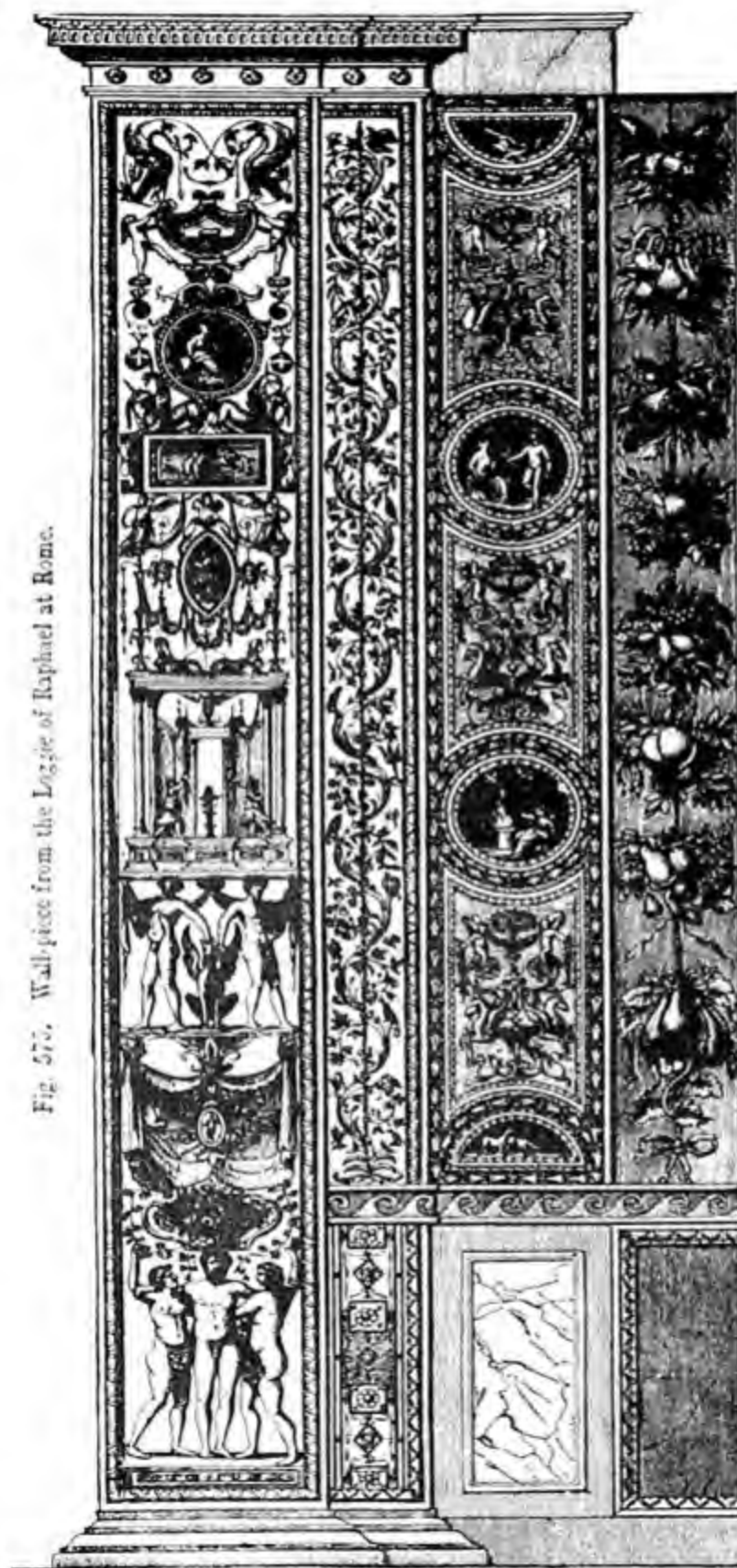


Ornamentation peculiar to the Late Renaissance Style.

§ 365. When the monuments of Roman antiquity became a subject of study at the commencement of the era of the Renaissance, the belief was entertained that the architecture of bygone days was to be invested with a new lease of life. But the organism of the Classic style did not provide for every modern requirement, and for buildings of several storeys, the only types which were available were the Roman theatres and amphitheatres, and the then existing

Septizonium of Severus: the temples had to serve as models for halls, whilst the triumphal arches were taken as copies for other public buildings, and for the interior vaults the baths were employed as a pattern. Consequently, the early Renaissance style bears an essentially decorative character, inasmuch as it employed the individual forms of ancient architecture after adapting them to the creations of modern times, not as constructive but rather as decorative elements, which, however, the Renaissance endeavoured to reproduce in a manner that was at the same time regular and noble. When the awakened perception of the beauties of Grecian and Roman buildings led to the resumption of the horizontal architrave instead of the pointed arch, the grotesque treatment of the pointed, angular, and swelling foliage which was employed in the capitals and friezes of the Gothic style (see Figs. 420, 421, 433, 435, 476), had to give place to the acanthus leaf and other more graceful forms of ornament. When the gloomy spirit of the Middle Ages was forced to vanish before the new zeal for classical studies and the delight which they occasioned, the whole appearance of buildings, in their totality as well as in their details, seemed to be brightened up, and to be imbued with that spirit of regeneration which permeated at the same time through social life.

§ 366. The above-mentioned development of the decorative element of the Renaissance style took place especially in interiors, and sculpture and painting, the sister arts of architecture, working harmoniously together, produced most excellent results. The walls and ceilings were covered with paintings, whilst a method of coloured decoration, which came into vogue in consequence of the excavation of the Baths of Titus, was very generally employed. This consists of objects taken from the vegetable kingdom blended in a fantastic manner with figures of men and animals, of masks, of vessels, of shields, and even of entire pictures; and combined with the architectural details of the building, and in conjunction with statuary. The whole forms one of the most praiseworthy features of the Renaissance, and the celebrated Loggie of Raphael are instances of this mode of treatment (Fig. 575). The decorative paintings of Raphael's pupil, Giulio Romano, and of many others, are likewise remarkable. The Gothic method of ornamenta-

Fig. 575. Wall-piece from the *Loggia* of Raphael at Rome.

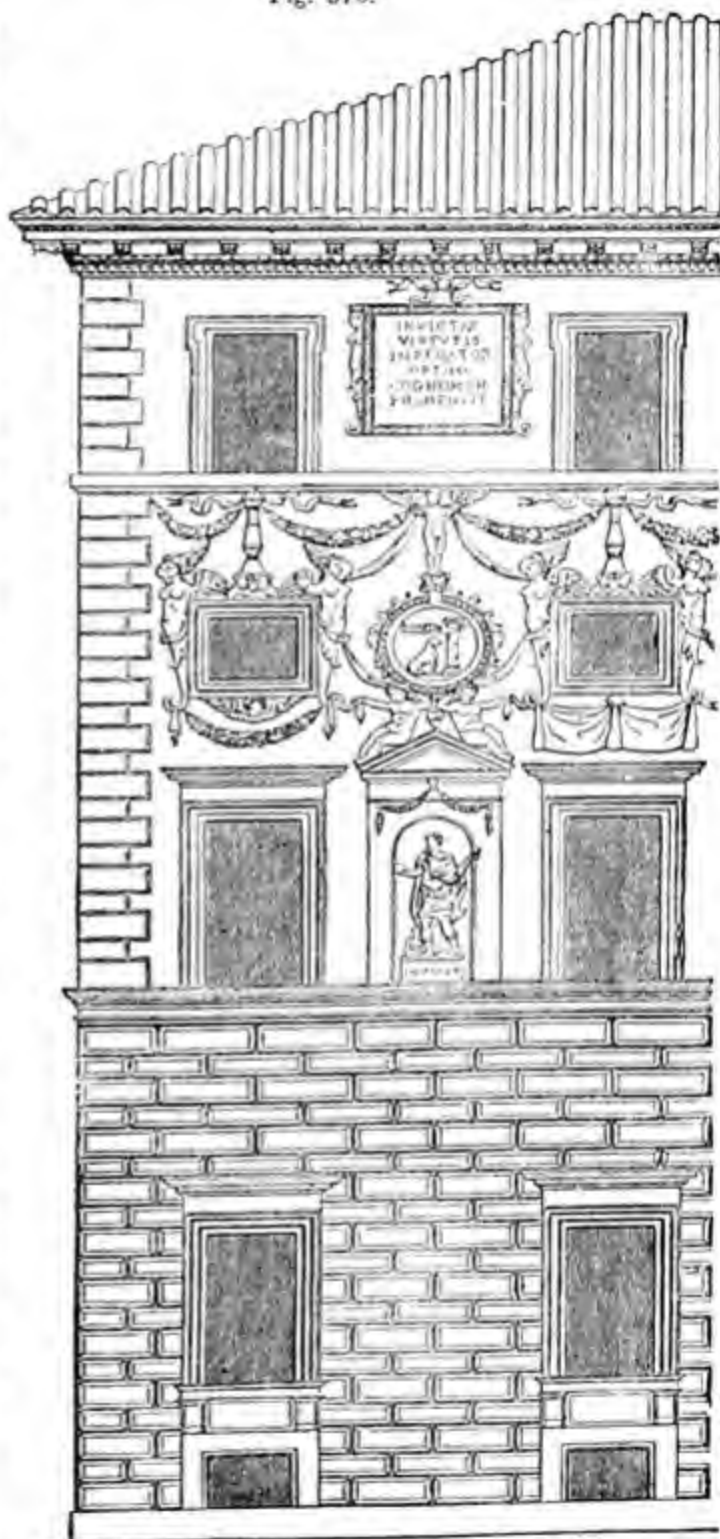
tion with its mere combinations of lines and perpetually recurring borderings and panel-work seems tame and insipid beside the bright and graceful decoration of the Renaissance, in which such ample scope was allowed to the play of the fancy.

§ 367. Besides the walls and ceilings of the interior, the façades were frequently decorated with sculptured figures, and the flat spaces between the windows and mouldings underwent ornamentation. This took place either by a manner of painting called *sggraffito*, in which the undercoating was black, with a thin surface-coating of white laid over it, and then the design or shading was engraved or scraped away down to the black ground-

ing; or similar designs were executed in bas-relief, as is shown by Fig. 576, whilst Fig. 577 represents part of a façade painted in sgraffito.

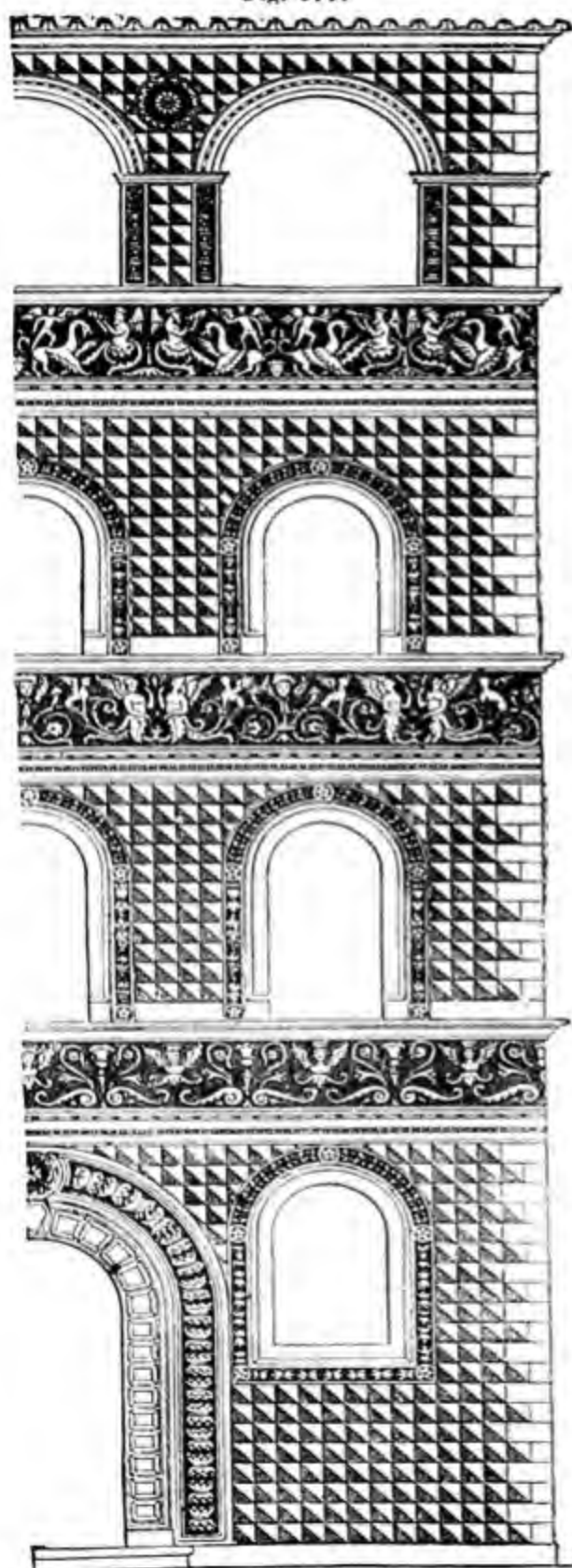
§ 368. During the flourishing period of the Renaissance, architecture showed less hankering after mere richness of detail, and strove rather after noble simplicity: and this tendency was exhibited even in interiors, although in a modified degree. This flourishing period lasted scarcely fifty years, and occurred at the middle of the sixteenth century, and during its prevalence decoration was kept within due bounds, and in harmony with the principal forms. At the same time it cannot be denied that a certain architectural beauty, or at least a pleasant effect, was often produced in the later period of the Renaissance when the decoration was no

Fig. 576.



Part of the Façade of the Spada Palace at Rome.

Fig. 577.



Part of a Façade painted in Sgraffito at Rome.

longer so well regulated and when the details were not in such strict accordance with the main object of the design.

§ 369. Whilst the Florentine and the Venetian Renaissance styles remained, with trifling exceptions, confined to their respective districts, the Roman Renaissance style, as well as the Rococco style which succeeded it, extended over all Western Europe. The adoption of this style, however, took place later than in Italy itself, where the Pointed style had never gained such a firm hold as in other countries. The first influence upon the later developments of this style of the Italian or Renaissance manner is perceptible in a return to horizontal lines with the flat and the semi-circular arch, particularly in secular buildings.

This altered treatment of the Pointed style during the last period of its employment forms the only transition which took place to the Italian Renaissance style. In Germany, this latter is called simply "the Italian style." There is, properly speaking, no transition style, as in Italy; but the Renaissance style was at once accepted as a complete

and developed one, and adopted with the principles which prevailed in the land of its birth. It is only in France, where it was introduced somewhat earlier than elsewhere, that many buildings exhibit a free treatment with reminiscences of the Romanesque style.

The alterations and modifications which the Renaissance style underwent in Italy were carefully copied in the countries in which it prevailed. It was, moreover, precisely at the epoch of its greatest deterioration that this style was most extensively employed in non-Italian countries.

No characteristic national features and no local points of difference are therefore to be sought for in the buildings of the various countries, except in those subtle shades of variety which owe their origin to the higher or lower æsthetic development and artistic status of these countries.

§ 370. The artistic influence of Italy came into operation in France sooner than in other European countries, for as early as the fifteenth century the Renaissance style 'was introduced there by Italian architects, as, for instance, by Fra Giocondo, who was summoned thither by Louis XII. But at that epoch the Flamboyant style was still in its vigour, and the buildings then erected could not extricate themselves from its influence. The consequence was that a blending of the two styles temporarily prevailed, as, for instance, in the Château de Gaillon, which was built between the years 1502 and 1510, part of the façade of which is preserved in the court of the Ecole des Beaux-arts at Paris, as well as in the Château de Blois, which Louis XII. caused to be built, and which has lately been restored by Duban. It was in these country residences of the nobility, especially on the banks of the Loire, that this architectural activity was displayed during the earlier period of the Renaissance; amongst their number the Château de Chambord (Fig. 578) is most worthy of notice. The pilasters and the mouldings of the Renaissance style were, it is true, somewhat rudely carried out, and in the earlier period were combined with certain elements of the Flamboyant style. Highly ornamental gables and dormer-windows, especially, were executed in the latter style. Buildings were contemporaneously constructed entirely in the Flamboyant style, as, for instance, the Cathedral, the Palais de Justice, and the Hôtel

Bourgtheroulde, all at Rouen, and the Hôtel de Ville at Compiègne.

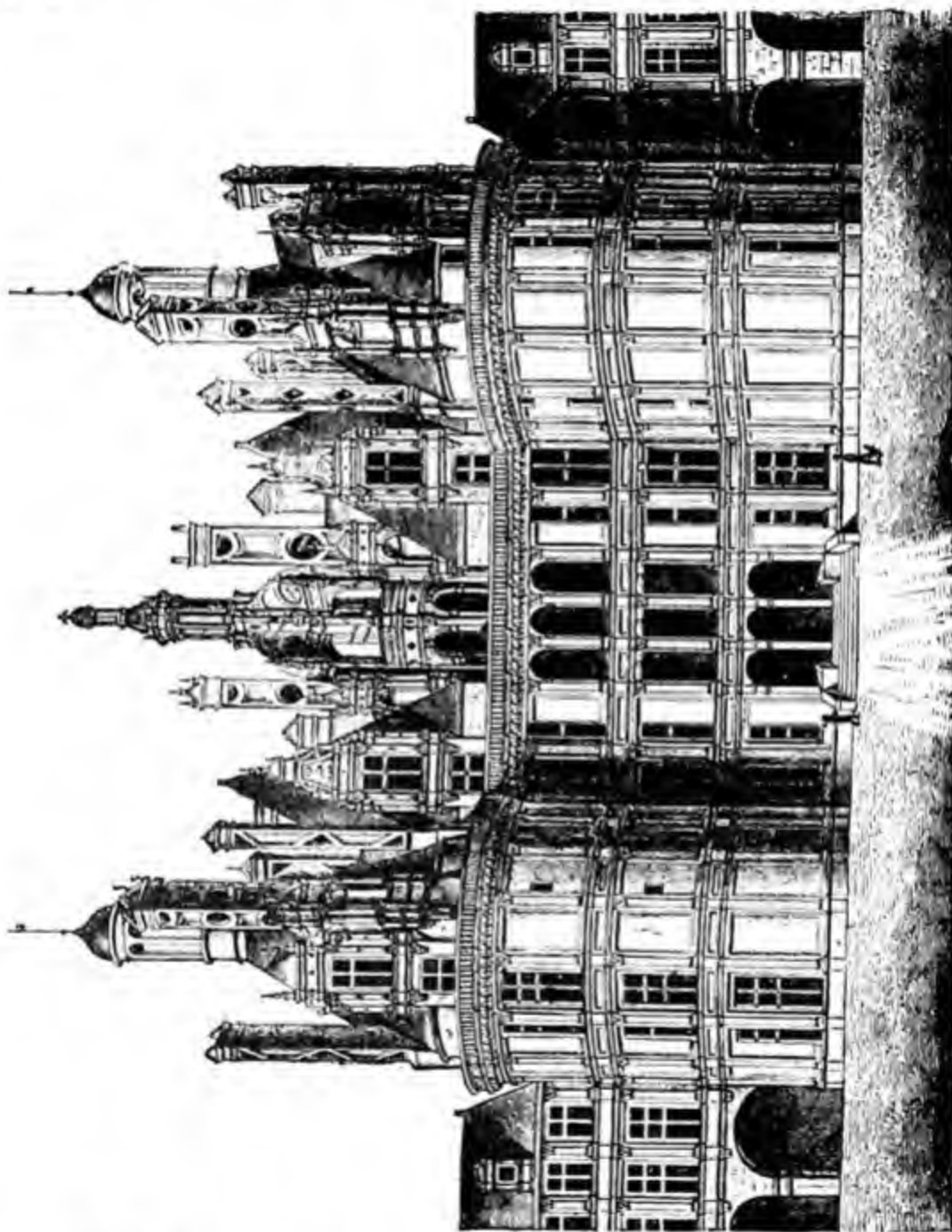
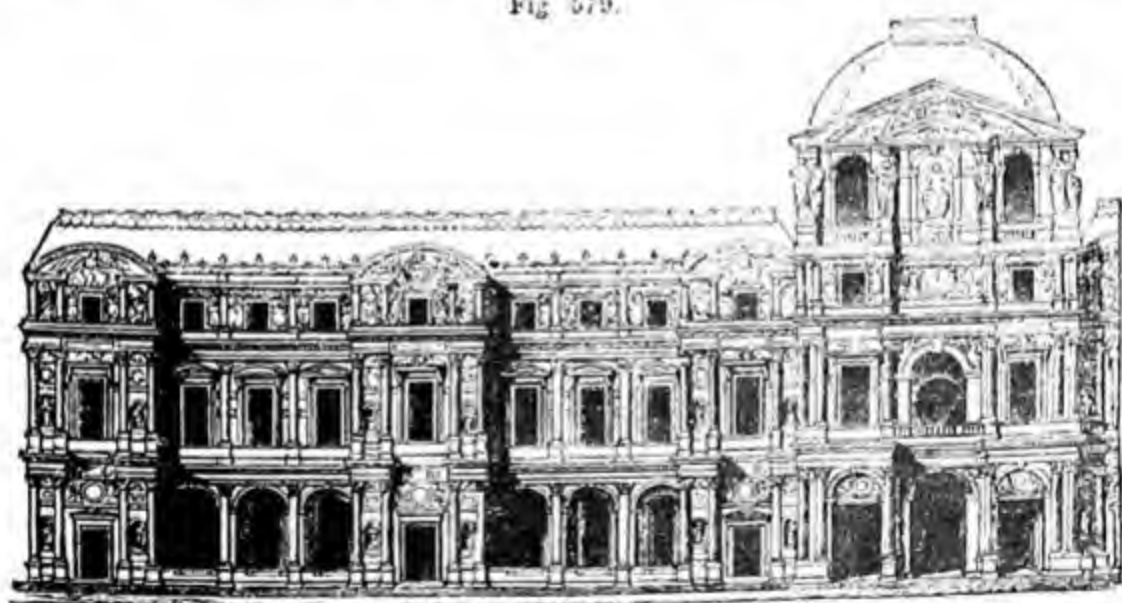


Fig. 578. Château de Chambord.

The Italian Renaissance had, as has been shown, to struggle with the Flamboyant style during the reign of Louis XII. It made, however, decisive progress under Francis I., who summoned Serlio and other Italian architects from their native country (1515—1547), and

under his successor, Henry II. From that time forward the ancient columnar orders were universally substituted for the architectural features which had hitherto prevailed, as, for instance, in the Hôtel de Ville at Paris, which was built by Domenico Cortana in 1533. It must, however, be remarked that the Italian architects who were resident in France modified their ideas, consciously or unconsciously, to suit the French taste. A style was thereby produced which may be called French or Italian, according as the proclivities and influence of the one or the other nation predominated. After the period of Philibert Delorme, who completed the chapel of the Château d'Anet in the Renaissance style in the year 1552, the Gothic style was, as a rule, abandoned, in spite of the opposition of many French architects, who struggled against the foreign style of architecture at Beauvais as late as 1555. At the same time the general arrangement of the Gothic churches was retained, and it was only the Renaissance system of decoration which was substituted for

Fig. 579.



Section of the inner Façade of the Louvre.

the Gothic: the ground-plan, the proportions, and the whole structure with its flying buttresses, pinnacles, clustered columns, deeply recessed portals, etc., is borrowed from the pointed style, and it was only in the details and in the ornamentation that the Renaissance

Fig. 580.

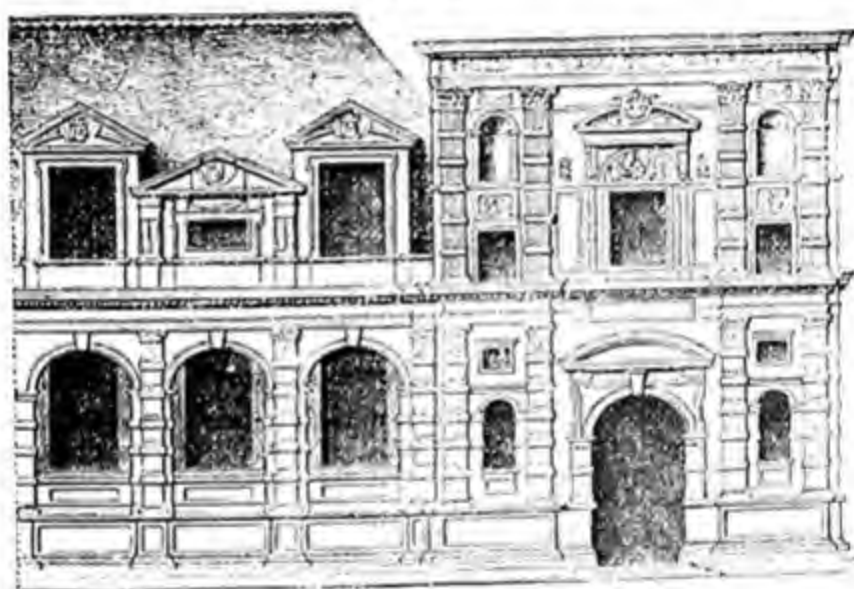


Part of the inner Façade of the Louvre at Paris.

was followed. The Church of St. Eustache at Paris and the Church at Gisors are instances of this architectural phase.

The three prominent architects, Pierre Lescot (1510-1578), who designed the celebrated Western Façade of the Louvre (Fig. 579 and 480, a portion of the same on a larger scale), Philibert Delorme and Jean Bullant, who was the architect of the earlier portions of the Tuileries (Fig. 581), and of the Château d'Ecouen, exerted such an influence over the architecture of their native country that the

Fig. 581.



Part of the oldest Façade of the Tuileries.

Italian Renaissance Style became thenceforward the predominant one in France. The above-mentioned château gradually assumed a typical character. The façade of the Louvre is, however, essentially French in contradiction to Italian, and this is especially noticeable in the ornamentation. Jean Goujon and Paul Ponce executed for this façade the best sculptures which marked the Renaissance in France. Under these joint influences an elevation was produced in which richness is perceptible without excess, and symmetry is attained without stiffness; in fact, a design in which æsthetic laws are fully considered, and the details harmoniously, if not magnificently, executed. Although the French architects who flourished in the reign of Francis I. inclined towards the Italian style of the fifteenth and sixteenth

centuries, and especially to that of Bramante, yet they succeeded in imparting a peculiar grace to that style, as it was developed in France, which nevertheless vanished towards the end of the sixteenth century. At the same time, however, it must be admitted that the French Renaissance Style cannot for a moment be compared with the Italian during its palmy period, either as regards purity or novelty of design.

§ 371. Little by little a method of ornamentation was introduced by successive decorators and architects, which was eminently suited to the French taste. Androuet Du Cerceau and Jean Lepautre are especially noticeable as representatives of this school of embellishment. The sumptuous Apollo Gallery in the Louvre is a characteristic example of the productions of the latter. Fig. 582 exhibits a portion of the system of decoration which pervades the whole gallery.

Du Cerceau, who flourished during the reign of Henry IV., connected the block of buildings which belonged to the Louvre, and had been constructed under Catherine dei Medici, by a gallery with the Tuileries (Fig 583). This architect abandoned the characteristic feature of the French Renaissance, which had prevailed hitherto, namely, of giving its peculiar columnar order to each storey, and assimilated his designs to those of the late Roman Renaissance, in which a striking effect was produced at the expense of truth by continuous columns and pilasters extending over several storeys and rows of windows.

Although Du Cerceau was obliged to leave France in the year 1604, the impulse which he had given in the direction of the above-mentioned manner led to its being generally adopted. The new buildings were more correct, but less picturesque than those built during the earlier period of the French Renaissance, and a certain insipidity seems to characterize the various structures erected during the reigns of Henry IV., and especially Louis XIII. As is shown by Fig 584, a combination of free-stone and brick was resorted to in such a way that the former was employed for the mouldings, and for the quoins and dressings of the doors and windows, whilst brick was used for the spaces between. In the case of the windows the free-stone introduced assumed the form of quoins. If ornamentation had been previously

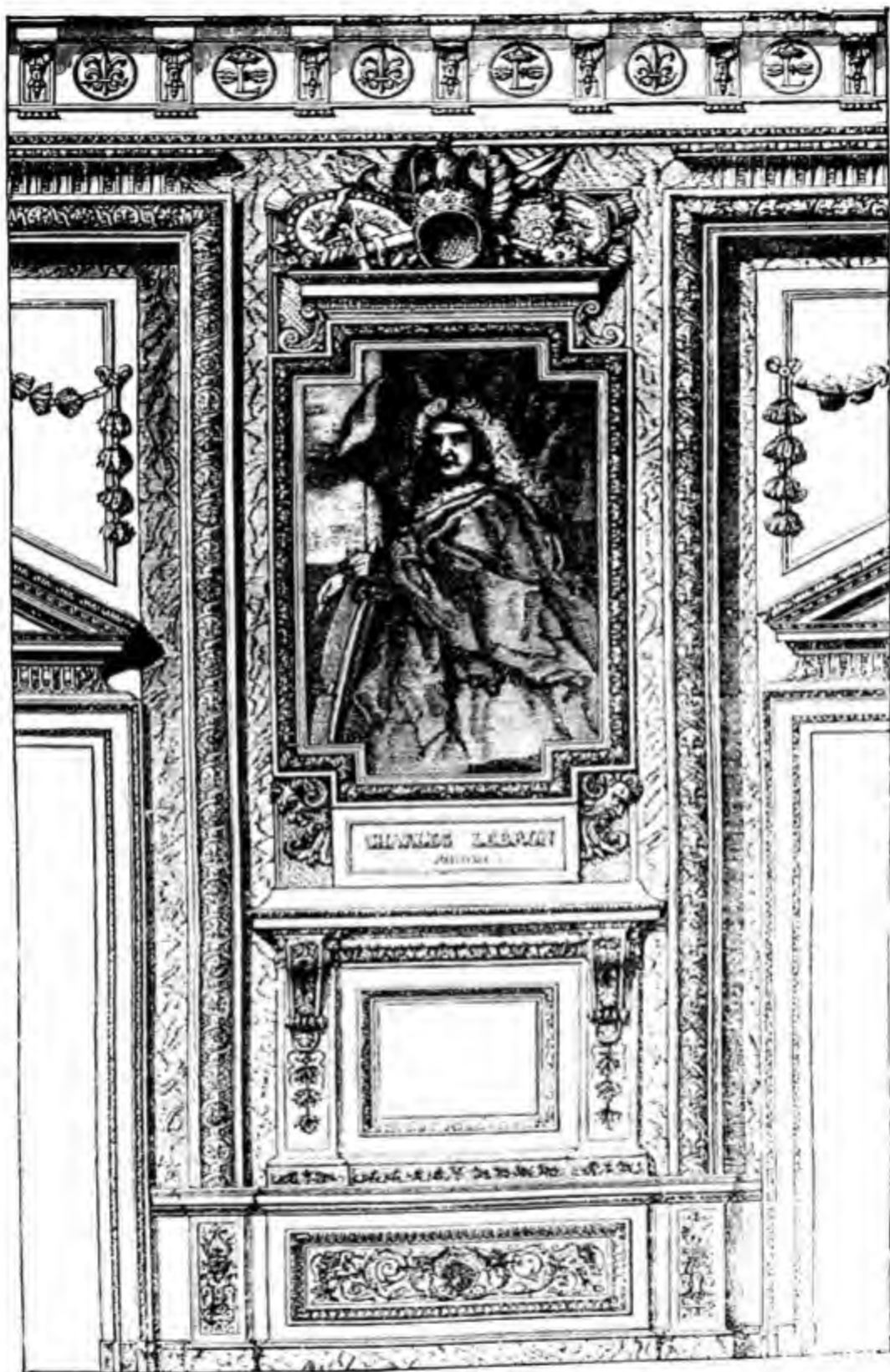
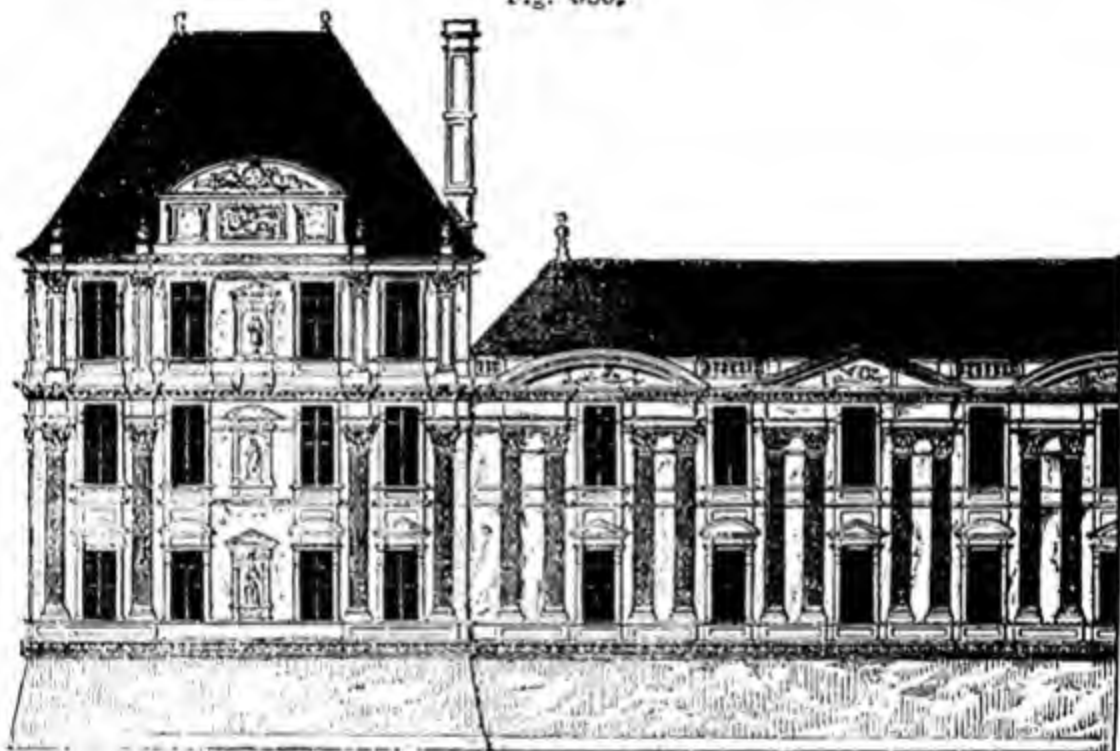


Fig. 582. Fragment from the Apollo Gallery in the Louvre at Paris.

excessive, it now retired into the background, and was only employed in moderation ; and the method of its treatment began to be distinguished from that of the former period. The forms of the details above all began to lose in purity : rustications were inappropriately introduced in the walls and columns, and the roofs were made high and steep, which gave the rest of the building a heavy and squat appearance, whilst the numerous turret-shaped chimneys, which were

Fig. 583.

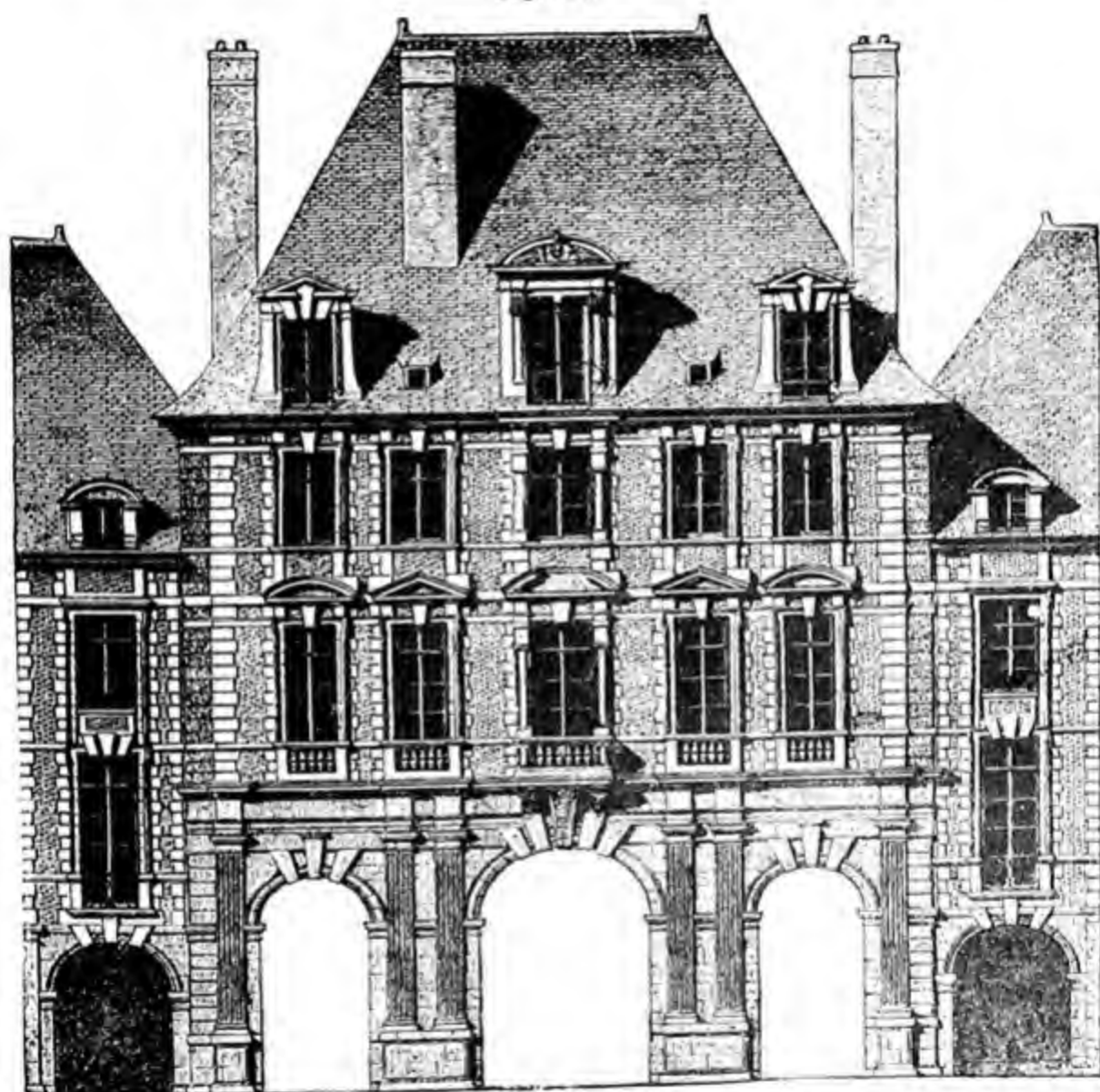


The Flore Pavilion and part of the Gallery of the Louvre, before the modern reconstruction of the Façade.

necessitated by these high roofs, formed a peculiar feature in the construction. The Roccoco, or Baroque Style, which forms the subject of the next chapter, was beginning at the same time to exert its influence. Commencing from the second half of the seventeenth century, this new architectural deviation became prevalent in all civilized countries, owing to the splendour and influence of the French power and manners, and the influence of Italian art was consequently paralyzed. Fig. 585 gives a characteristic example of the French architecture of this period of the Later Renaissance, showing the peculiarities which have been described above.

At the same time that the better tendencies of the Renaissance period disappear in the second half of the seventeenth century, and the new edifices display proofs of a deterioration of taste, the degeneration

Fig. 584.

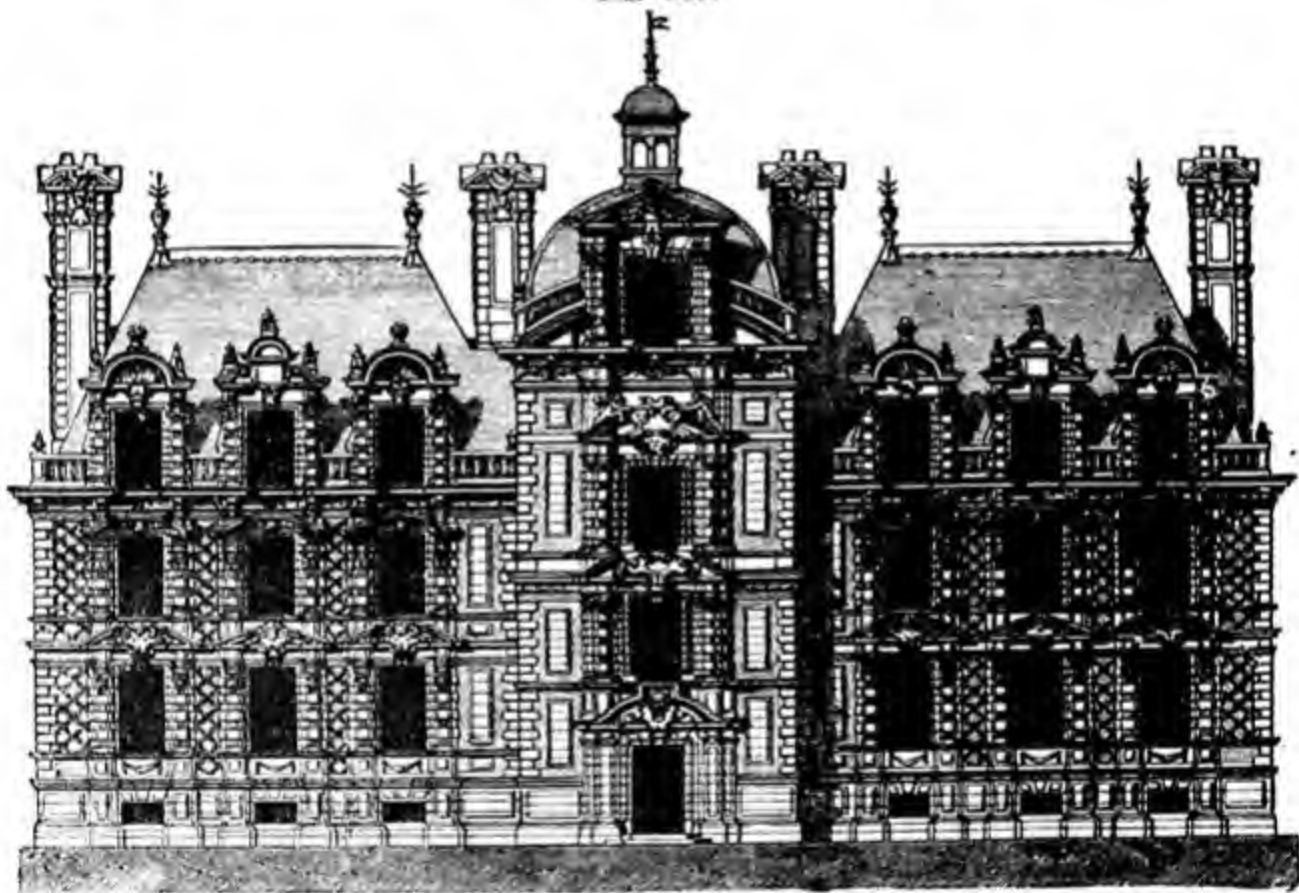


Part of a Façade in the Place Royale at Paris.

which had set in continued to increase with time, as may be gathered from the various buildings of the reign of Louis XIV. The natural laws of architecture were more and more neglected, and

replaced by certain conventional rules for the application of the Roman columnar orders. Amidst all this desire for show, this magnificence and a great profusion of means, especially of the popular column and pilaster arrangement in large dimensions, as, for instance, the over-praised Colonnade of the Louvre, there is still a certain insipidity peculiar to the constructions of the period. In accordance with the disposition of Louis XIV., architecture was for the future only to give expression to that proud pomp which characterized all the undertakings and the whole reign of the Grand Monarque.

Fig. 585.



The Château de Beaumesnil.

The principal architectural activity of this period was displayed by Jules Hardouin Mansard, who was head architect to the king and the head of an influential school, as Lenôtre at the same time was principal horticulturist. Mansard built the palaces of Versailles (1647-1708), Marly, the Grand Trianon, as also the Invalides at Paris (Fig. 586).

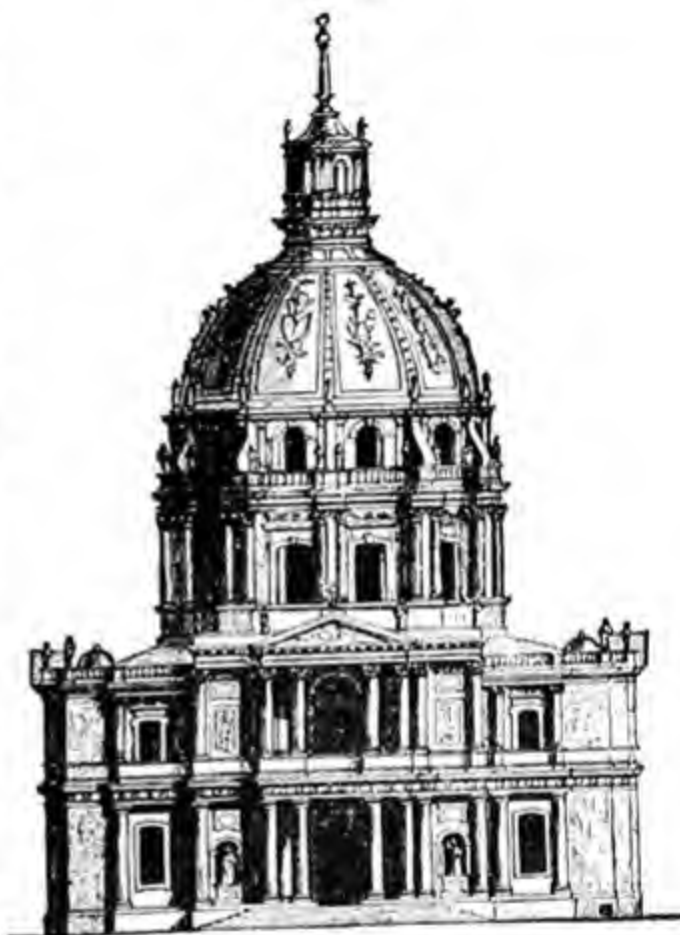
The internal system of decoration which had been brought in by Lepautre was modified by Mansard and Berain. Mirrors were freely introduced in the embellishment of rooms, especially in connection with the fire-places, and may be said to have now become a distinctive feature in the decoration of interiors.

It was in the seventeenth century, contemporaneously with the decadence of Italy, that the domineering influence of France on other countries began to be recognized. This result was mainly attained by the power and glory of Louis XIV., as well as by the brilliancy of his court. In many places French gardens and castles were imitated, and French architects were employed in their construction.

On Mansard's death a considerable alteration took place in French architecture. An entirely new system of decoration arose for interiors, which is often known under the designation *Rococo*. This is somewhat different from the Italian *Rococo* style which will be described in §§ 379 and 380, and properly belongs to that division of the work in which the *Rococo* style is discussed, but it is inserted in this place in order to secure continuity, and to trace the whole course of the French Renaissance without interruption.

§ 372. It was principally the above-mentioned system of Roc-

Fig. 586.

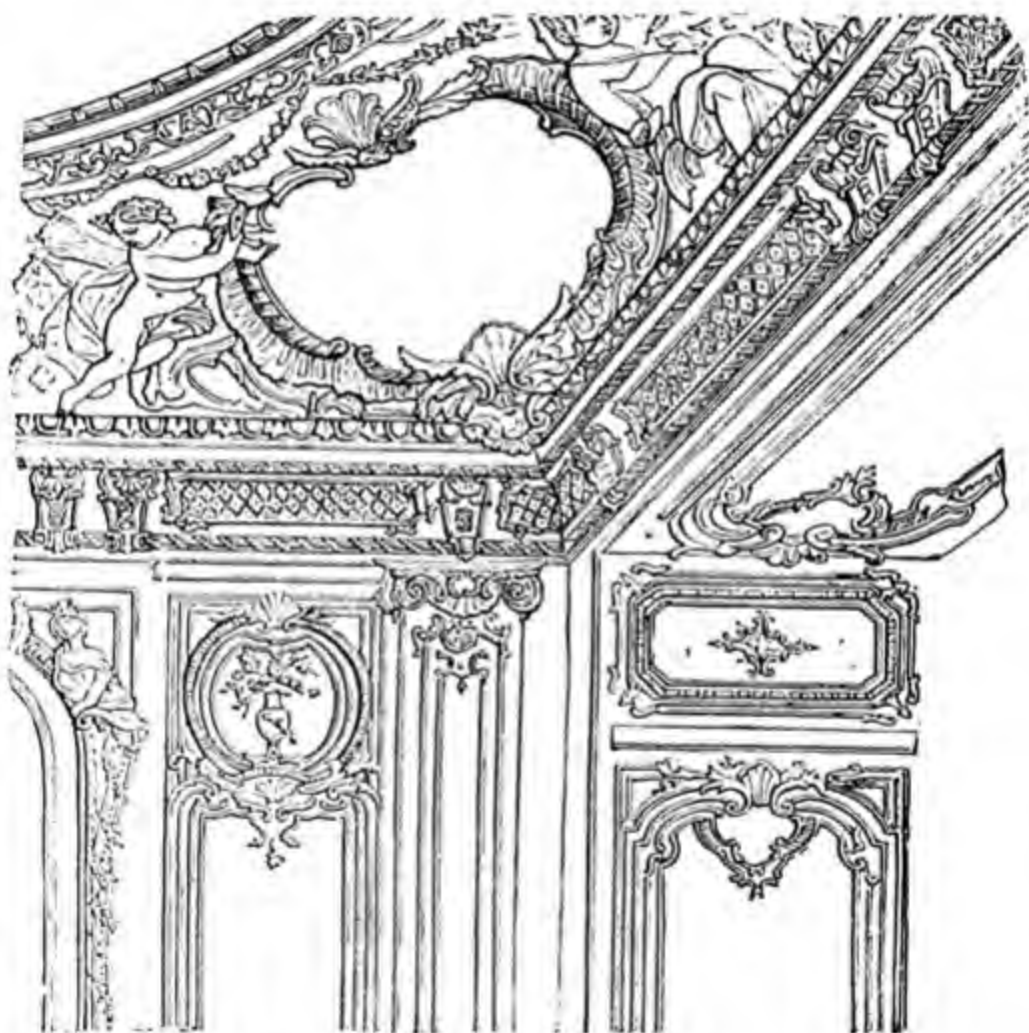


The Invalides at Paris.

coco decoration and architectural detail which characterized the architecture of the time of Louis XV.; it is, consequently, sometimes designated as the style of Louis XV. Fig. 587 gives a portion of an interior drawn in perspective, whilst Fig. 588 depicts the entire wall from which this portion is taken.

Internal arrangement and decoration are the main characteristics of the style of this period, and in this direction the best results were

Fig. 587.



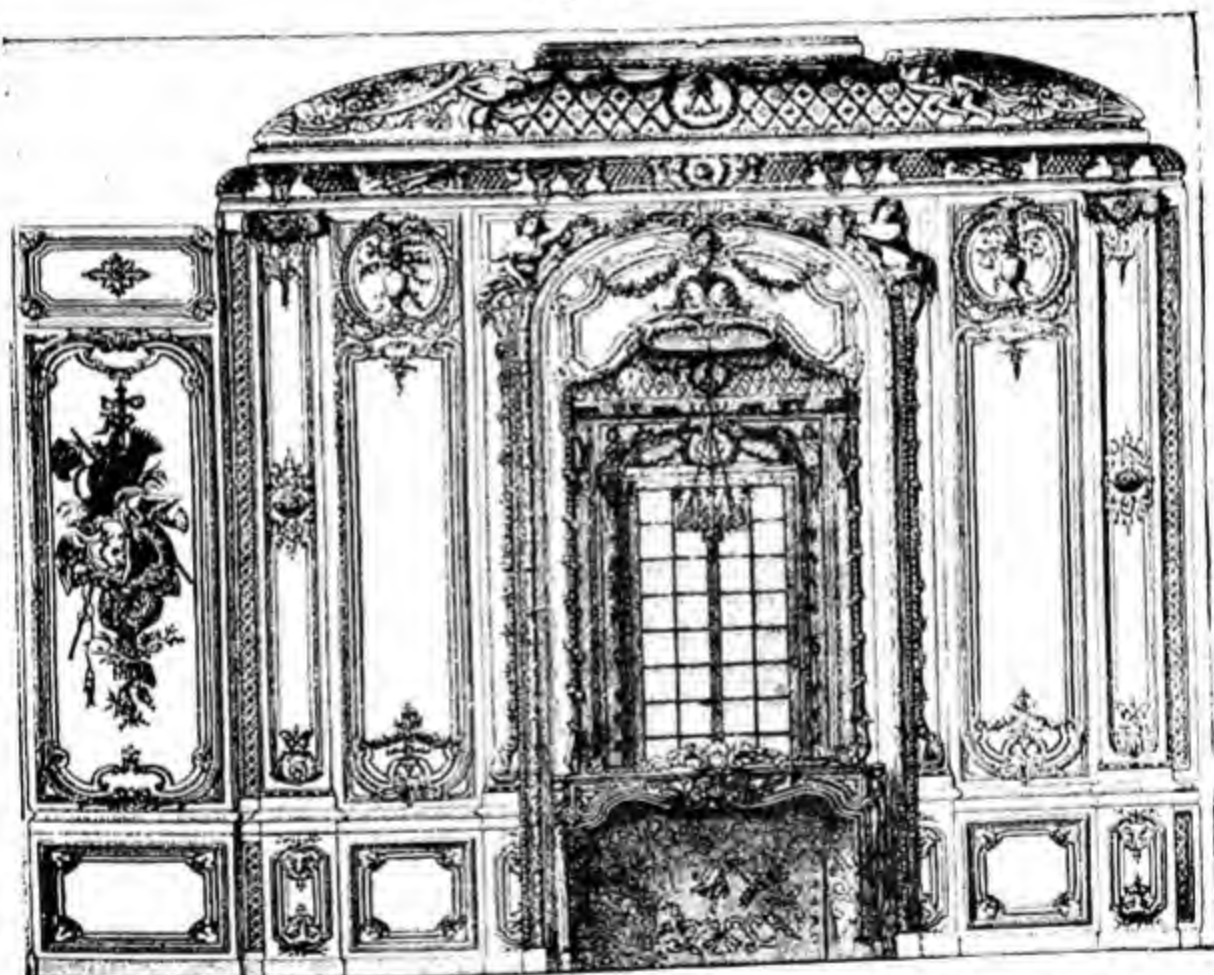
Portion of Fig. 588 on a larger scale.

doubtless produced. Large and lofty rooms, as well as scope for display, were indispensable; consequently this style of embellishment was most happily carried out in state apartments, especially in the

princely castles and palaces, or, as the French call them, the "Hôtels" of the aristocracy.

De Cotte must also be mentioned as well as Berain, as his plans and buildings exercised considerable influence, and caused the princes of foreign countries to be desirous to avail themselves of his services. Indeed French artists were in great request at this period in Europe, for Paris had become the model which was thought worthy of imitation in other lands.

Fig. 588.



Decorations of a small Saloon in the Palace of Versailles, of which Fig. 587 gives a portion on a larger scale.

§ 373. Towards the end of the reign of Louis XV. a reaction set in, which was caused partly by the excess and caprice dis-

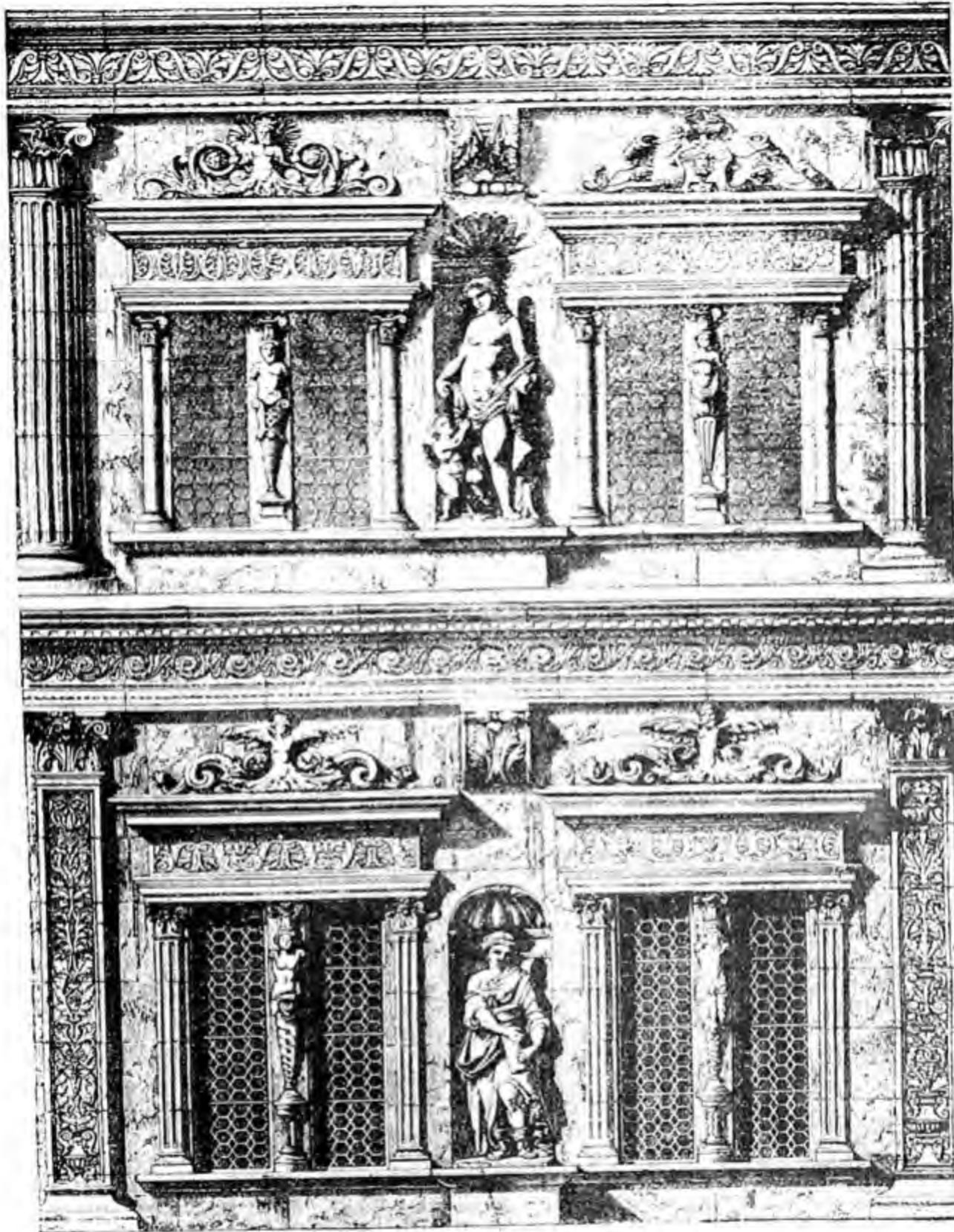
played in the application of this style, and partly by the tide again setting in the direction of the antique. This is evidenced by the Colonnades de la Place de Concorde, and by the Church of Ste. Geneviève, which was begun by Soufflot in the year 1755, and subse-

Fig. 589.



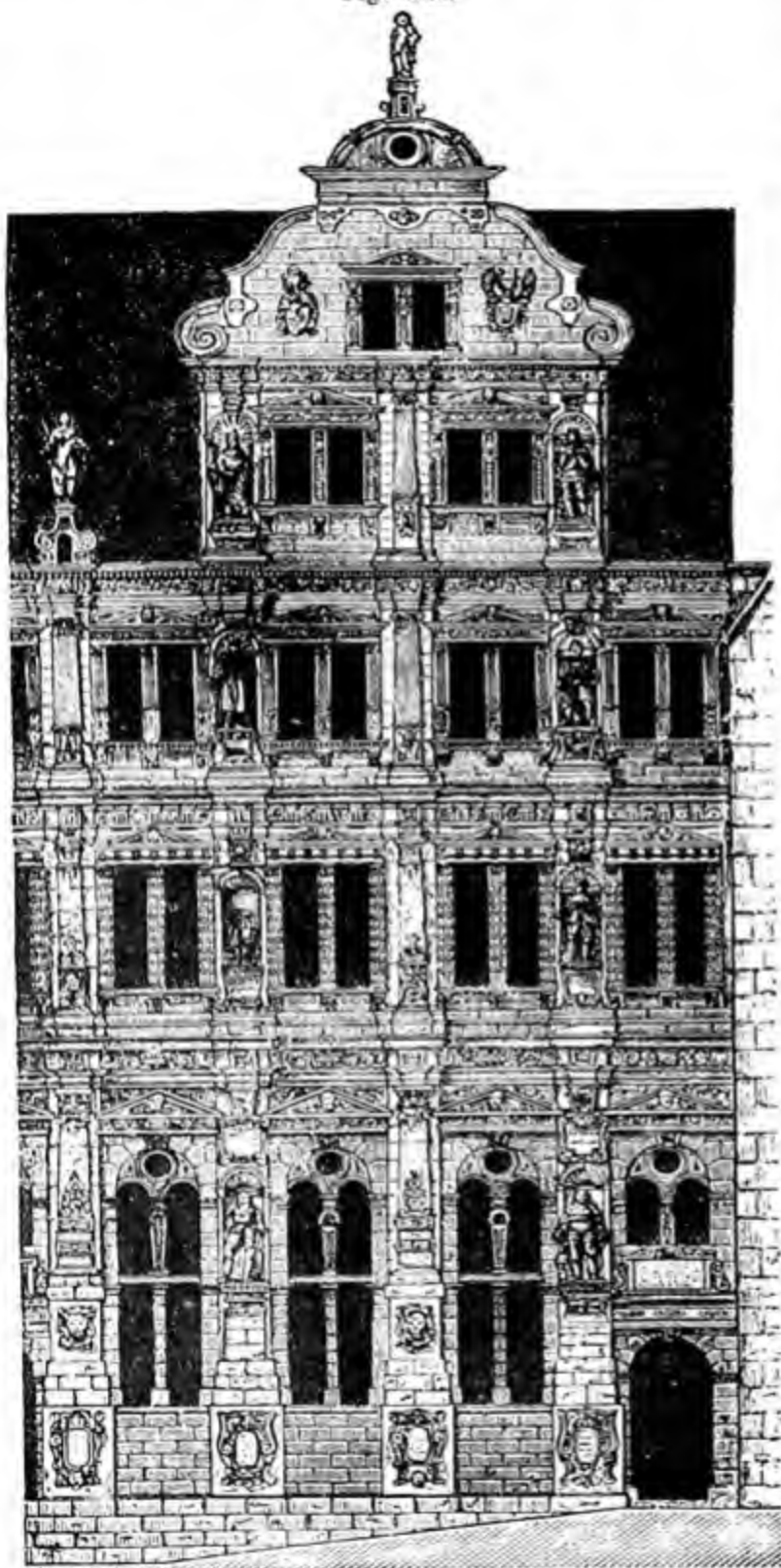
West Front of the Pantheon at Paris.

quently received the name of the Pantheon (Fig. 589). From thenceforth imitations of ancient buildings came into vogue, as they also did in other countries. As a counterpoise to the former license, a certain strictness and moderation in ornamentation was now resorted to, which at last almost approached deficiency. Percier set himself the task of correcting this false step, and succeeded in again



Figs. 590, 591. Part of the Façade of the Otto Heinrich Buildings in Heidelberg Castle.

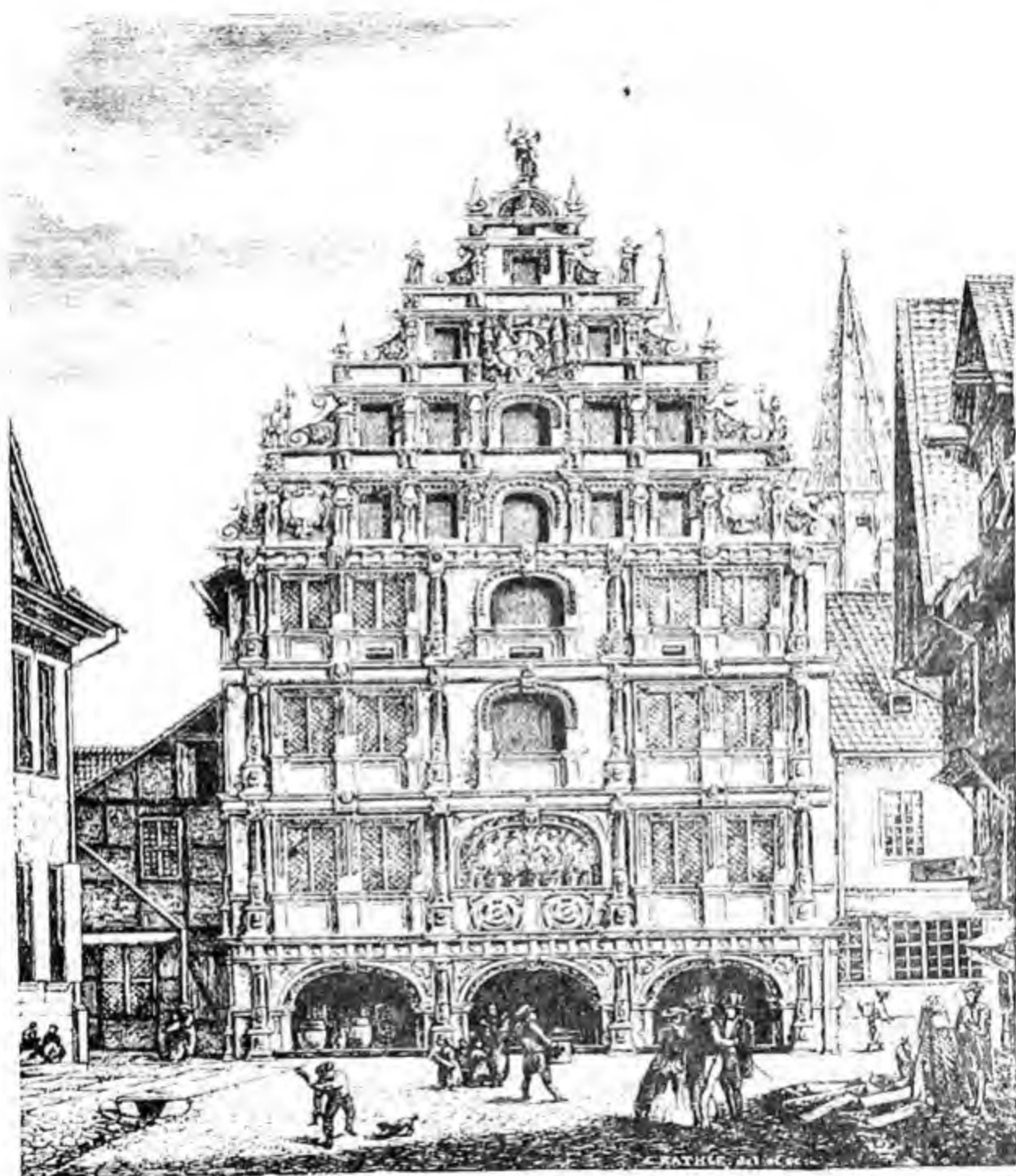
Fig. 529.



Portion of the Façade of the Buildings of Henry the Wise in Heidelberg Castle, 1601-1607.

placing the art on a proper footing. His intelligence, his capability and his knowledge were very considerable, and in the year 1792 he opened a school, which must be considered as one of the most influential that ever existed; for the most efficient and renowned architects of the whole of Europe who attained reputation during the first half of the present century had there acquired their knowledge of their art. The founder of the school himself was considered as an indisputable authority both under the first Empire and in the days of the restored Bourbons; and, in conjunction with Fontaine, he erected structures in the Roman style, amongst which may be mentioned the

Fig. 593.



View of the Cloth-Hall at Brunswick.

Madeleine, and the Bourse, and the triumphal arch in the Carousel. His numerous freely-treated decorative achievements in the Roman Renaissance style, in castles and palaces, have for half a century been regarded as models, and frequently imitated.

§ 374. The Renaissance style was not employed in Germany before the middle of the sixteenth century, and the most noteworthy instances of it are the Belvedere of Ferdinand I., on the Hradschin at Prague, and the so-called Otto Henry buildings at Heidelberg Castle (1556-1559). The façade of the last-mentioned structure, of which Figs. 590 and 591 represent portions, is peculiar for a richness and variety of details which almost border on excess. At the same time a certain heaviness prevails, which forms a contrast to the graceful elegance of the best Italian buildings in the same style: in fact these faults may be said to characterize the productions of the German Renaissance style in general. A further instance of this is afforded by Fig. 592, which represents a portion of the façade, though, properly speaking, it belongs to the Roccoco style.

The three illustrations which have been taken for this work from Pfnor's very meritorious "*Le Château de Heidelberg*" should tend to moderate the excessive admiration which is bestowed on this the most esteemed of all the buildings of the German Renaissance. The picturesque beauty of the present ruins ought not to screen the lack of pure and graceful forms of detail when judging of the architectural and artistic merits of the building. Fig. 593 shows an interesting and pleasing example of the German Renaissance.

In Germany, as in other countries, the elements of the preceding style are intermingled with those of the Renaissance during the early period of its prevalence, particularly as regards details. It was not till the seventeenth century that any architects of note flourished: amongst these may be mentioned Elias Holl of Augsburg (died 1636), in which town he built the Town-Hall and the Arsenal, and Holzscher, who was the architect of the Town-Hall at Nuremberg.

The architectural activity, which had so long been hampered by the Thirty Years' War, followed the method of treatment advocated by Bernini and Borromini, which is marked by great capriciousness in the treatment and disposition of the architectural forms. Dietterlein also contributed greatly by his publications to the extension of this

school. In the year 1685 Nehring began the Arsenal at Berlin which was finished by Schlueter, the architect of the Palace, who died in 1714. The latter was followed by Knobelsdorf, the architect of Frederick the Great; he built the palaces of Charlottenburg and Sans Souci and the new palace at Potsdam. The Zwirner Palace at Dresden, which was built in 1711 by Poepelmann, must also be mentioned as a noteworthy example of this style.

§ 375. In Spain an Early Renaissance Style appears, a kind of transitional Renaissance belonging to the first half of the sixteenth century. It consisted of the application of Moorish and pointed arch forms in conjunction with those of classical antiquity: in this way a conformation was produced which was peculiar to Spain, and the style is characterized by bold lightness, by luxuriance in decoration, and by a spirit of romance. Naturally there was no harmony founded on a duly concerted organic arrangement: it is rather the excess of magnificence which dazzles the sense and causes a favourable impression in the spectators of the buildings, such, for example, as the quadrangles of the palaces and monasteries of the period.

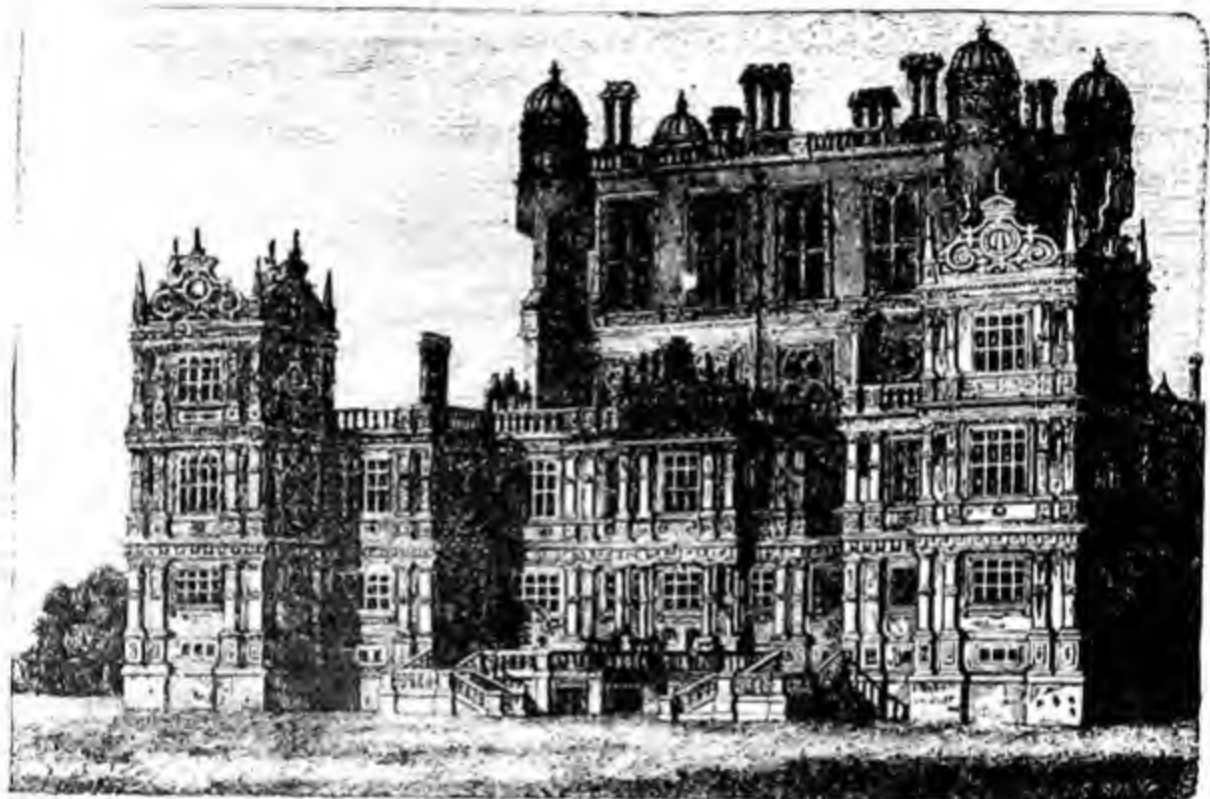
In the reign of Charles V. this ornate early Renaissance style gave place to a later one, which in reality belongs to the Roccoco style. It came into universal use in the second half of the sixteenth century, and was much aided by the extensive architectural undertakings of Philip II. Its principal expositors were the architects Giovanni Battista de Toledo and Giovanni d'Herrera, who were both pupils of Michel-Angelo.

§ 376. The Italian Renaissance style was introduced into England about the middle of the sixteenth century by John of Padua, the architect of Henry VIII., towards the closing years of the reign of that monarch. In the reign of Elizabeth to the end of that of James I., Dutch architects were in vogue in England in consequence of religious and political sympathies. Their peculiarities of taste are reflected in that English branch of the Renaissance style usually known under the name of Elizabethan.

It must be remarked that, as a rule, English buildings in the Renaissance style are distinguished by capricious treatment of forms, and generally exhibit a deficiency in that grace and dignity both in details and ensemble which lend a peculiar charm to Italian structures

in the same style. English Renaissance buildings also differ in the same respects from the French; they display more similarity with those of the Later German Renaissance, as, for example, the Castle of Heidelberg; where there is much similarity, at least in the treatment of details, to the style known as the Elizabethan.

Fig. 594.



Wollaton Hall.

It is especially this vitiated taste in form and details which characterized the Elizabethan Renaissance (see Fig. 594). The usual Roccoco Renaissance forms also occur in it, as, for instance, the quadrant-shaped gables curving alternately inwards and outwards, as also pilasters and columns intersected by quoins and bands; and various grotesque and debased forms. Enriched quoins are also freely used at angles and jambs. Fig. 596 may serve as a specimen of the details of the Elizabethan style.

Inigo Jones, who was an imitator of Palladio, and who designed the Palace of Whitehall in London, deserves mention as the only English architect of this period who, to a certain extent, preserved

the classical Renaissance style in its purity, and free from numerous extraneous innovations. Christopher Wren (1675—1710) followed in his footsteps; he was the architect of St. Paul's, London, a building

Fig. 595.



Ground-plan of Fig. 594, Wollaton Hall.

which, by its dome, recalls St. Peter's at Rome, and though marked neither by elegance of form nor vigour of style, still possesses considerable architectural importance.

§ 377. Figs. 598 and 599 are intended to convey an idea of the details of decoration which characterized the Renaissance style during its best period, and which display considerable grace and finish. They are based on the antique Roman type, but still display a peculiar independent treatment, as in the deeply under-cut foliage in the arabesques and the lightness and clearness of the stalks and tendrils.

The ornamentation of the Later Renaissance is less vigorous in tone, and allows the admixture of animals with vegetable forms, and in this way serves as an introduction to the Roccoco style. Festoons are of frequent occurrence, as also cornucopias and garlands, as well as fabulous subject such as dragons, satyrs, dolphins, masks, lions' heads, and so on.

Fig. 596.



Corner of a Fire-place in the Elizabeth Gallery at Windsor Castle.

In conclusion, it must be remarked that the sculptured ornament of the Early Renaissance was distinguished by its excellent effect, due partly to the fact that the separate portions of the decoration

Fig. 597.



St. Paul's, London.

were varied both in their bulk and in the degree of projection given to them, but more to vigorous undercutting and skilful disposition of light and shade, so that when seen from a distance only a few salient points stood out in prominent relief. It is only on a close inspection that the more delicate lines of the leaves, tendrils, and figures which connect together these large masses display themselves. The masterly manner with which Renaissance ornament is treated

Fig. 598.

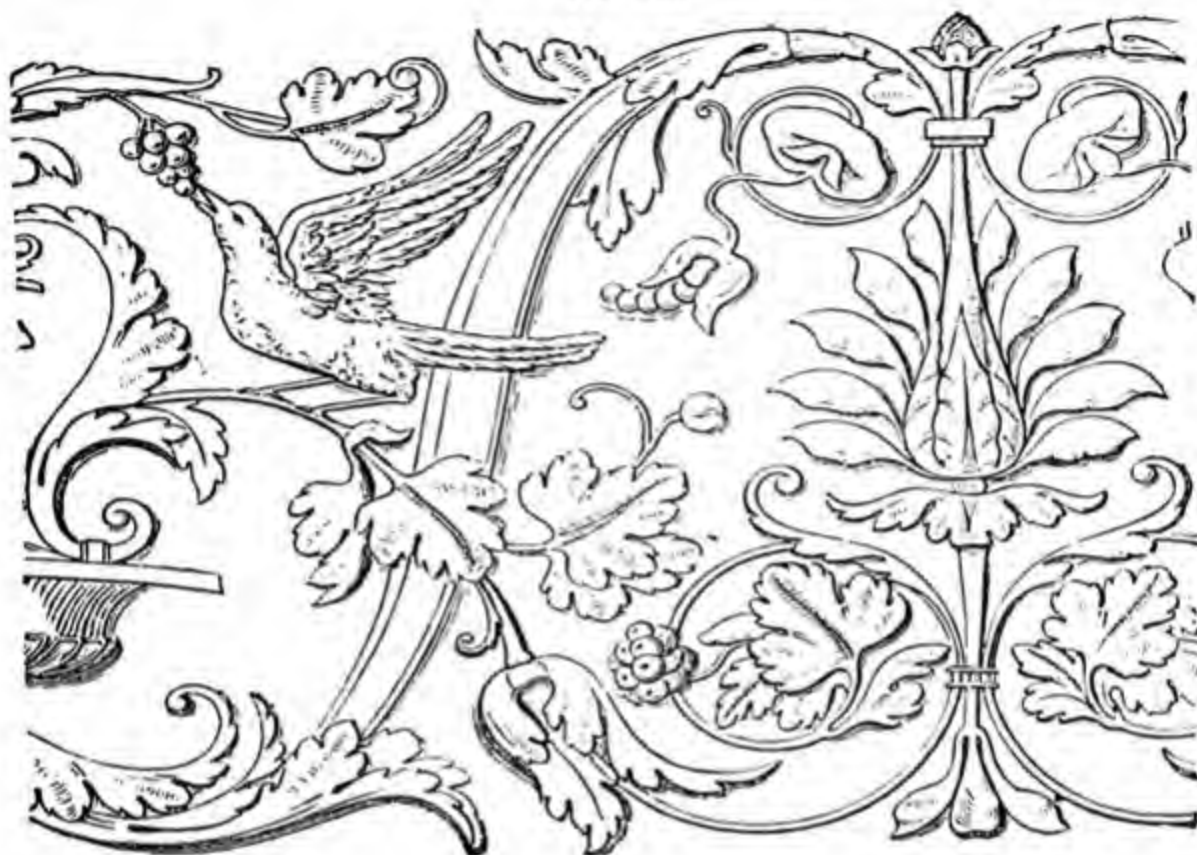


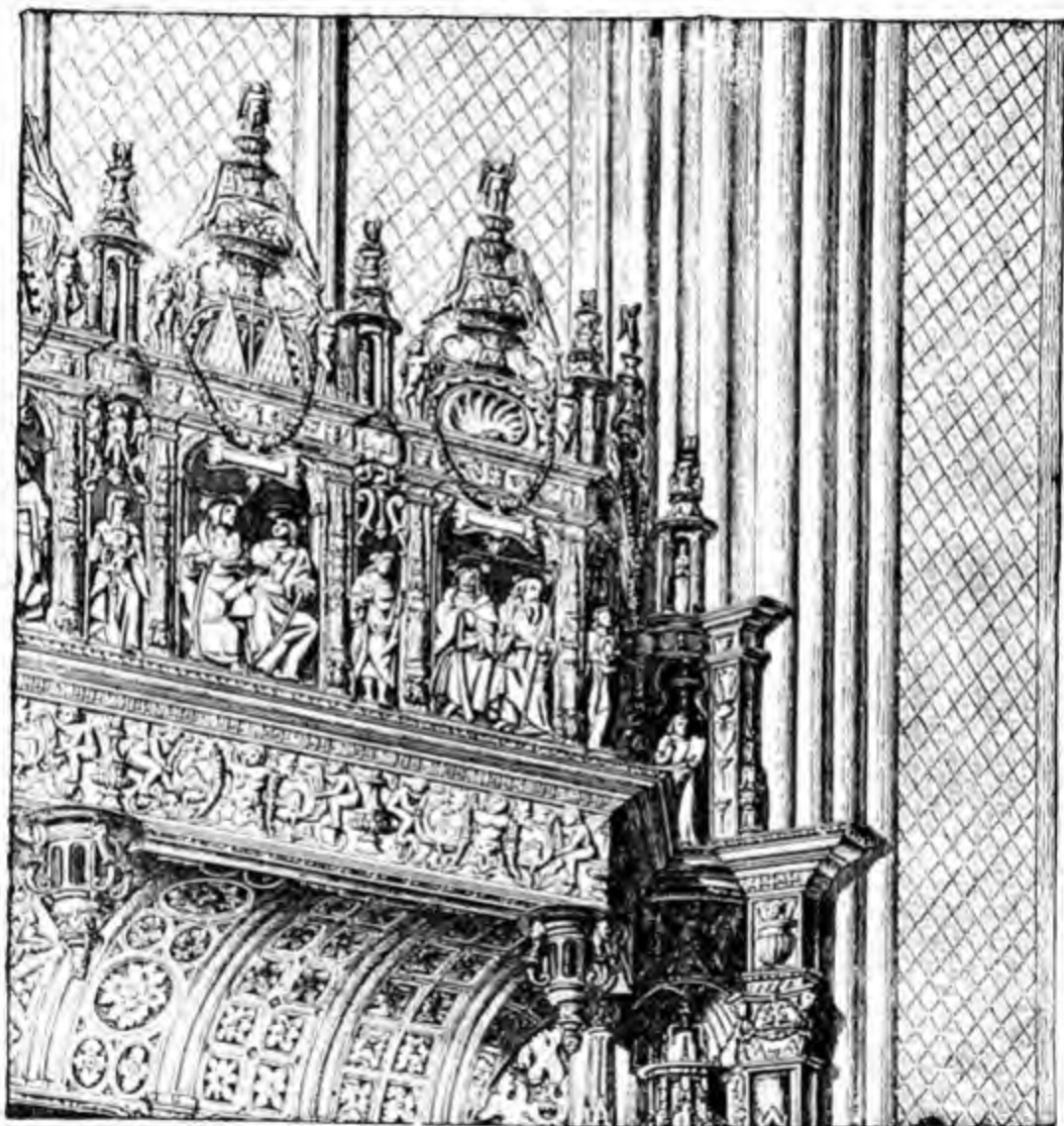
Fig. 599.



Portions of Friezes at Venice.

appears chiefly in the fact that all portions are not dealt with alike, the finest effects being obtained by the subordination of individual portions and the prominence given to those which are most important. The ornaments are also so arranged as to form a pleasing

Fig. 600.



Canopy of the Tomb of Cardinal d'Amboise at Rouen.

contrast with the containing or adjoining architectural lines ; and are fitted and subordinated to them ; a matter of the highest importance. In this respect the later Renaissance cannot boast of equal success. On the contrary, more salient ornaments began to be uniformly em-

ployed, and in too great profusion. Increased richness of effect was, it is true, thus arrived at, but the productions lost in grace what they gained in richness. As a sort of counterpoise to this tendency the architectural mouldings and details were executed in a more decisive and prominent way, so as to keep the decorative details in subordination to the main plan. On the other hand ornamentation tried by dint of increased extravagance to accommodate itself to the exaggerated architectural features. The result of this was that the style became heavy and inartistic.

Fig. 600 represents a characteristic specimen of French Renaissance decoration, and with this we will conclude our chapter on Renaissance Architecture,

II.

THE ROCCOCO STYLE OF THE RENAISSANCE.

§ 378. As has already been shown in the preceding portion of the work, the tendency was displayed soon after the revival of ancient Roman architecture to consider the columnar orders as the most essential element, and to construct everything in accordance with established rules. As early, however, as the middle of the sixteenth century an opposite tendency was observable, and excessive freedom in the employment of objectless and unusual forms became apparent, which by no means tallied with their original purpose and which consequently led to the total decadence of architecture. It is true that antique forms were still continually employed, but in a manner which was not in accordance with, and even antagonistic, to the original intention.

As has been mentioned in the previous chapter, Michel-Angelo was the first who, with his genial but at the same time untractable proclivities, displayed his unwillingness to conform in imitative art with the laws laid down by nature, and as regards construction, to observe the conditions necessitated by static and architectural canons. For the sake of novelty, he introduced strange and discordant forms which were called into existence neither by actual necessity nor by the original design, and his intention appears to have been to excite astonishment rather than admiration.

It was, moreover, a special misfortune for art that his admirers and imitators endeavoured not only to copy, but to surpass, the faults which could only be pardoned in the case of the towering genius of the Italian architect.

When the principles of noble simplicity and purity of form were no longer followed, a predilection began to be manifested for magnificence and luxuriance. This tendency was in accordance with the

spirit of the age, and attained its zenith during the reign of Louis XIV. The characteristic and constructive element, with its great moderation in the employment of ornamentation which marked the age of Louis XIII., had to give way before this new tendency, and solidity and sterling worth were superseded by a more flimsy and highly-embellished method of construction. One advantage, however, is attained in the productions of the Roccoco style, at least as regards the productions of the best architects; namely, that the effect of masses and the picturesque arrangement both of the external features and the internal spaces seems to have been thoroughly grasped, and a splendid and imposing result thereby attained; and although the details may display bad taste, yet the effect of the whole is often grandiose and not inharmonious.

This is especially the case with interiors, because the whole architectural ornamentation, as well as the furniture and other decorative objects, are fashioned, even to the smallest detail, in the same style and taste, and complete harmony is consequently secured. This offers a great contrast to our own times, when the objects which influence the general effect of our sitting-rooms, and even of our state apartments, are huddled together in the most heterogeneous way, without any reference to the character of the architectural enrichments. This evil seems only to be avoided in cases where the guiding hand of an artistically trained architect directs not only the architectural ornamentation of such apartments, but also the furnishing and introduction of the smallest details.

The essential points of difference between the Roman, Florentine and Venetian styles cease with the introduction of the Roccoco style of the Renaissance.

Apart from some modifications which were based on local traditions and influences, and which bear traces of the foregoing period, the Roman Roccoco style may be viewed as that universally prevalent.

§ 379. The Roccoco style may, in its turn, be divided into two periods, which are to be distinguished by variety of style. The first period comprises the time between its first appearance, in the middle of the sixteenth century, and the beginning of the seventeenth, during which the pure and simple forms of the Renaissance were not yet

entirely abandoned, and the advantages which have just been alluded to are more observable, while the defects which have also been enumerated are less so than is the case in the second period. During this latter the greatest freedom in the treatment of architectural forms prevailed to the disregard of all laws, and free scope was given to the most fantastic combinations. This state of things was mainly brought about by the influence of **Lorenzo Bernini** (1589—1680), as well as by that of **Francesco Borromini** (1599—1667). The denomination **Roccoco** is distinctively assigned to the taste of the second period of the style. Many shades of difference have been traced in it, especially of late years, which have been classified as the **Jesuit Style**, the **Capuchin Style**, the **Spanish Roccoco Style**, etc. Within its domain fall all the architectural productions from the commencement of the second period till the latest revival of classical architecture during the last century. During this period the deterioration of architecture and taste went hand in hand with the contemporaneous unnatural fashion of wigs, and the senseless want of taste in the employment of pigtails and powder; and a certain affinity between the architecture of the seventeenth and eighteenth centuries, and a method of dressing the hair which then prevailed, has led to the expression "**Pigtail and Periwig Style**" being employed to describe the period under consideration.

§ 380. The main essentials in all the **Roccoco Styles** are a certain independence in the ornamentation of the main architectural organism, the prominence of this ornamentation itself, and finally its shapes and design. A luxurious elegance is displayed in the treatment of interiors, which was most happily employed in the embellishment of the state apartments. Fig. 601 gives an example of the absence of connection among the various ornaments employed in the system of decoration, such as was especially peculiar to the churches of the **Jesuits**.

In this style curved lines of the most varied description supersede all straight lines both in ground plans and in designs, whilst the most ordinary and characteristic embellishments are volutes, shell-fish, and scrolls; groups of fruit and garlands of flowers, hangings, curtains, etc. (Fig. 602). Columns, pilasters, and mouldings are intermingled and intertwined in a fantastic and meaningless manner,

the cornices are often interrupted; the essentially component parts of the architecture are frequently mutilated; for instance, columns and wall-pilasters are executed in rustic work, *i. e.*, formed of extensively projecting hewn stones, yet are furnished with a capital and base as is shown by Fig. 603, which is an illustration taken from the Late Italian Renaissance. For the sake of peculiarity, the various component elements assumed a form diametrically opposed to their original designation; mere decorative and secondary details were raised to the rank of essentials, whilst the real principal forms sank to an entirely subordinate position.

The greatest variety is displayed in the gables of dwelling-houses. Figs. 604 and 605 illustrate the highest pitch of tastelessness in this respect. At first the same were only boldly curved, or consisted of perpendicular stages, the central one of which was crowned either by a straight sided or a gently curved pediment, whilst the usual scrolls were introduced at the sides (either simple or sculptured). (Fig. 602.)

Fig. 601.

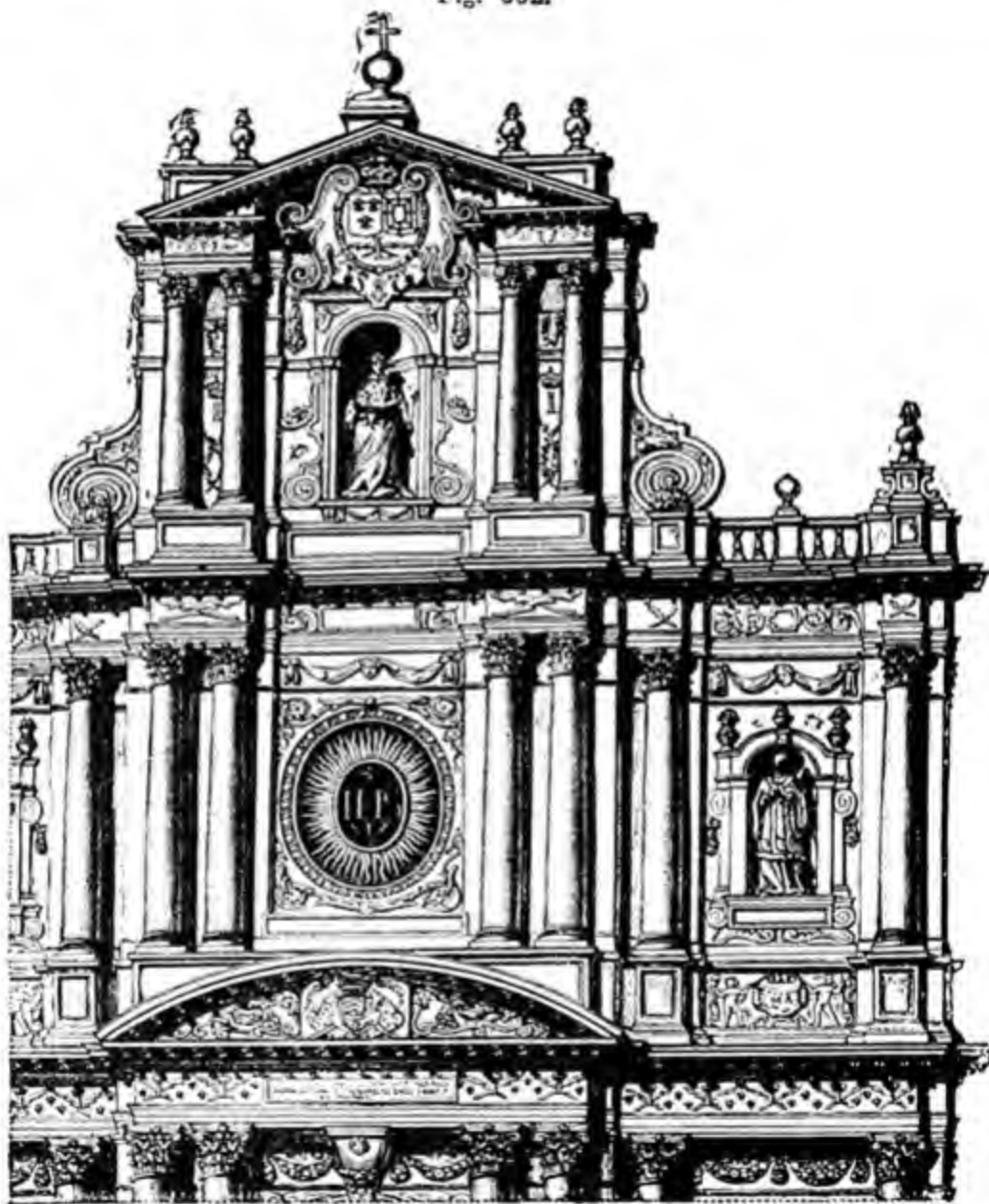
The following figures, which are taken from French buildings, are intended to illustrate the treatment of the various decorative features during the seventeenth century: Figs. 606 and 607 represent capitals, Fig. 608 a cornice, Fig. 609 the termination of a pilaster-strip with panel, Fig. 610 a decorative design in a similar panel, Fig. 611 the canopy of a panel. All these belong to the period of Louis XIV. Fig. 612 represents the setting of a panel, Fig. 613 the key-stone of an



Decorative Fragment from the Jesuit Church
at Rome.

arched head-piece, Fig. 614 the same with a rectangular setting, and Fig. 615 a console supporting a balcony, the iron railing of which is also characteristic of the Roccoco Style. These last four Figs. belong to the time of Louis XV.

Fig. 602.

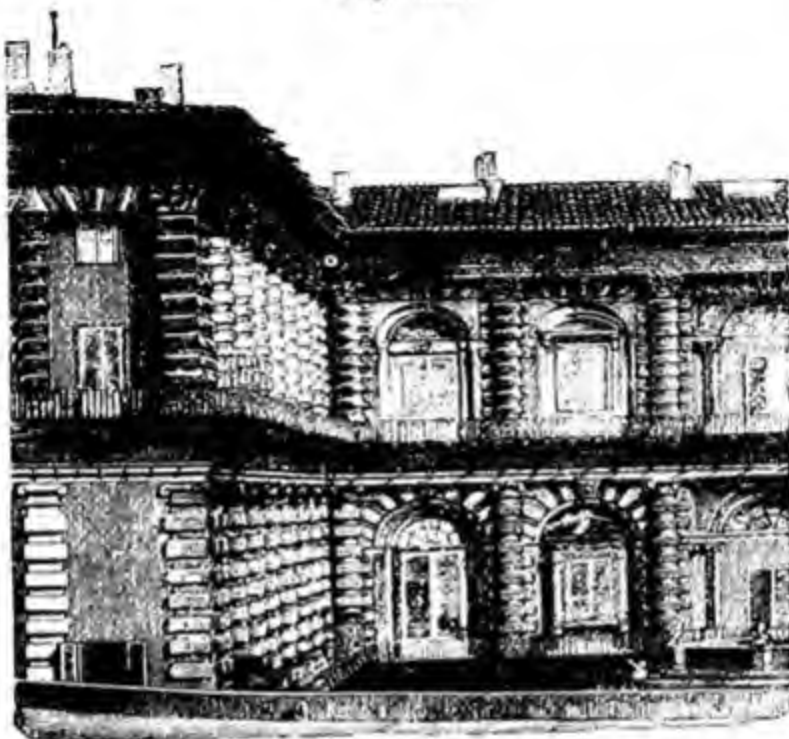


Part of the Façade of the Church of St. Paul and St. Louis at Paris.

§ 381. A deficiency in organization of form, from which fault the Renaissance was not free from its very commencement, be-

comes still more perceptible in the Roccoco Style, and continues to increase, till at length the utmost licence became usual. But in

Fig. 603.



Part of the Back of the Pitti Palace at Florence.

Fig. 604.



Fig. 605.



Gables of two Houses at Hamburg.

spite of all this it is indisputably necessary to accord the Roccoco Style its due merits, and accurately to determine, on the one hand, in what its defects consist, and, on the other, what were the causes and advantages which secured for it during a space of two hundred

Fig. 606.



Fig. 607.



Fig. 608.



Fig. 609.



Fig. 610.



Fig. 611.



Decorative Details of the time of Louis XIV.

years (1580—1780) a predominance over the whole civilized world in spite of the degeneracy of forms which it displayed. In Italy, especially, the numerous buildings constructed in the Roccoco Style must be taken into consideration when the architecture of that

Fig. 612.



Fig. 613.



Fig. 615.



Fig. 614.



Decorative Details of the time of Louis XV.

country is viewed collectively, and its details become the subject of observation and study.

During the time that the licence of the Roccoco Style prevailed, the elements of the ancient columnar orders were often misapplied, engaged columns and pilasters were frequently so connected with other side-pilasters which were recessed behind them to the number of one, two, or even three, that the cornices and, in fact, all horizontal mouldings were separately profiled over each column or pilaster.

(See Fig. 602.) The shape of the various architectural features was also strikingly arbitrary, especially that of the gables with their varied slopes and curves. Individual forms no longer possess an organic or constructive expressiveness; they were only employed as a means to insure the picturesque grouping of the masses, and were generally constructed in high relief, in order to bring out the due effect of light and shade. The advantage which it is admitted rose out of so unshackled a mode of treatment was that it became easy to secure beautiful proportions, as neither traditional meaning nor constructive motives were taken into consideration, and the object, regardless of these, was merely to create forms and proportions which were pleasing to the eye, and above all a picturesque effect.

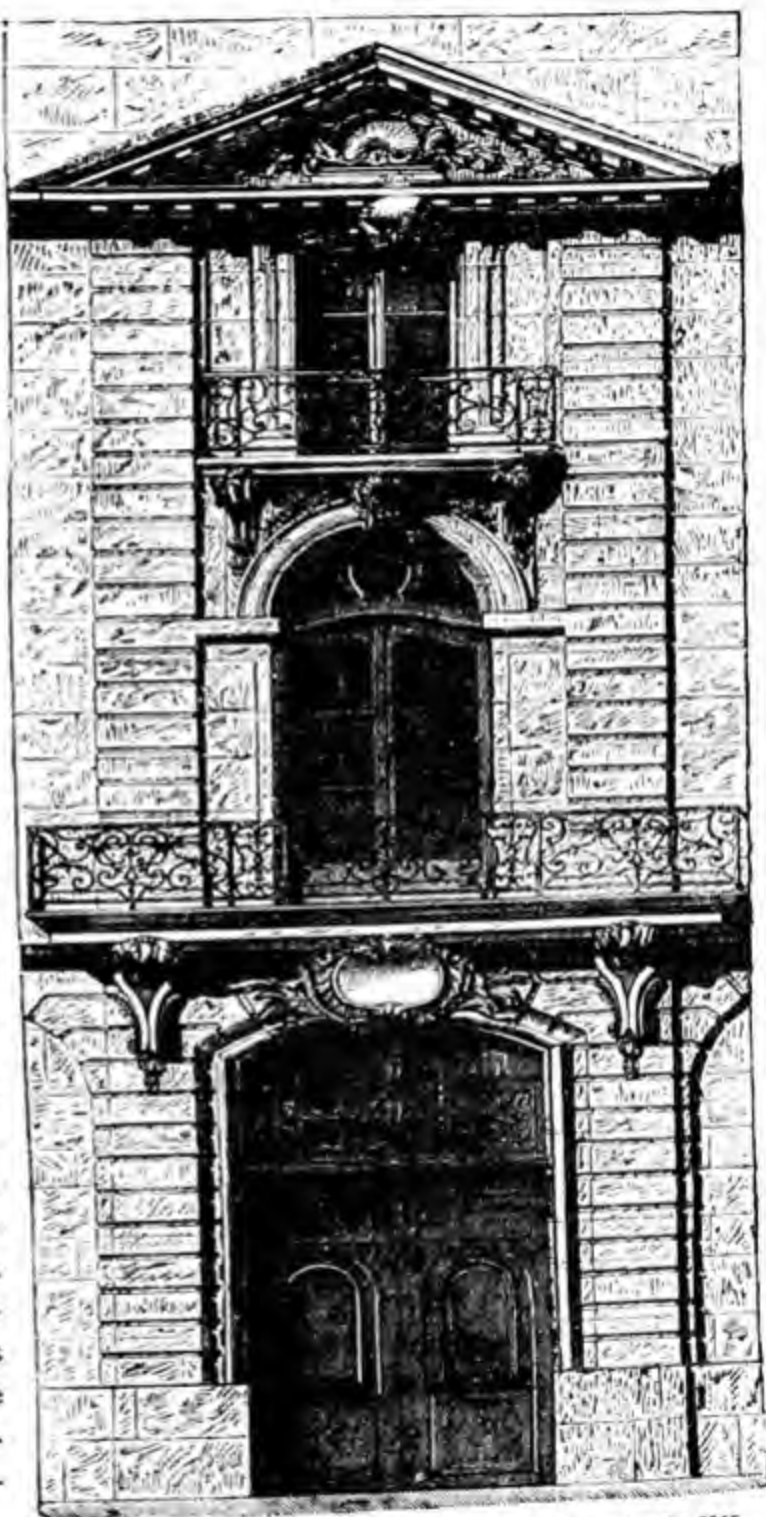
§ 382. Churches, more than any other buildings, underwent an entire change as regards interiors during the prevalence of the Roccoco Style. Pillars only occur in the naves in isolated instances, and were mainly used in external ornamentation, their place as supports to the broad and lofty upper spaces being taken by masses of masonry and heavy piers with galleries. Domes were frequently introduced, and were found, as they could be lighted from above, to secure fine effects of illumination.

The same love of the picturesque which compelled such changes in both essential and subordinate architectural features led to the employment of a system of internal decoration in which statues were combined with frescoes. This was the case principally, and to an excessive extent, in the churches of the Jesuits, and this mode of embellishment became so general and so marked in the churches of that order that the expression "Jesuit Style" has been adopted to designate it. The painting of the roofs played a most important part in the decoration of churches. Various kinds of settings were made use of, and other embellishments, such as festoons of flowers and fruits, and conchoidal designs, were freely introduced. The system of well-disposed panelled ceilings, which was so prevalent in the Renaissance Style, as exemplified in St. Peter's and elsewhere, had to give way to the new system of painting in fresco. The whole space of the vaulting was frequently taken up by a single painting which covered the entire surface, representing "glories," surrounded by other groups in a sitting or recumbent posture, with architectural details painted in

perspective, and the heavenly canopy represented in blue and gold. In order to give an appearance of reality to the hovering figures, detached parts of the same were frequently allowed to extend beyond the setting or enclosing border. Fresco painting consequently became all-important, but its very prominence not unfrequently militated against the general harmonious effect of the architecture.

The same licence in the treatment and application of forms is also displayed in secular buildings. The façades and their details were especially treated with the greatest freedom, and the original constructive intention of the latter was no longer a matter of consideration. Fig. 616 gives an example of the Roccoco style as applied to dwelling-houses.

Fig. 616.



Portion of a Façade at Paris in the style of Louis XV.

The taste for picturesque effect which plays such an important part in the productions of this style, found ample scope in the designs for vestibules and courts. The object which the architects were eager to obtain was that the view from the gateway should comprise some important detail, and convey an imposing or, at least, pleasing perspective effect. Particular attention was also paid to staircases. They were generally constructed with a view to effect, and had several landings with broad low steps, and had for the most part stone balustrades, and were covered over with rich vaults.

§ 383. In the eighteenth century circumstances occurred, which were favoured by the national tendency of that epoch, and set a bound to any further deterioration in architecture, though it was scarcely possible to sink to a lower pitch than that which it had then attained. These altered circumstances were, however, not powerful enough to bring about an entirely new development. Rational, or rather restrictive criticism, was, in accordance with the spirit of analysis, more suited to restrain further advance in a false direction than to call a new line of art into existence by means of creations demonstrative of genius. By the discovery of Herculaneum and Pompeii a veneration for antiquity was again aroused, which was, moreover, fostered by engravings of the best works of art that were preserved in museums, such as views of the temples at Pæstum, as well as by Piranesi's masterly views of Roman monuments, and, finally, by new editions of the writings of Vitruvius, with suitable explanations and illustrations. Although in other countries than Italy the Roccoco style prevailed for a considerable time longer, yet a reaction set in in favour of the efforts and tendencies of the sixteenth century. The further progress of the Roccoco style was prevented, but, on the other hand, artists were withdrawn from the sphere of art into the colder and reflective regions of science.

§ 384. Although the classical architecture of antiquity came thus again into repute, yet, owing to the want of thorough studies of the monuments themselves, the precepts of Vitruvius and the most celebrated architects of the sixteenth century still remained in vogue, especially those of Vignola and Palladio. The studies were consequently only second-hand, instead of being derived from the original sources. The architects were imitators of imitators. It is

therefore natural that their constructions, to which they strove more than ever to impart repose and severity of style, appeared only spiritless and insipid. Architecture seemed especially to lose in life and activity. Although no retrogression took place, still no progress was brought about ; but a condition of lassitude supervened, which, after the excesses of the period which had so recently elapsed, had not internal strength enough to expand into a free, renovated, and independent artistic activity.

III.

TIMBER ARCHITECTURE.

§ 385. In the preceding divisions of the work the peculiarities of those architectural styles have been described which required consideration either owing to their monumental and artistic importance, or to the reference they bore to and influence which they exercised upon the succeeding style. It still remains to take notice of a method of building which occurs in connection with several of the styles which have been described, and displays the features appropriate to each, but in which the material employed, namely, wood, has given rise to a certain general similarity of aspect, differing in this respect from stone or brick. But even in buildings constructed of this material two varieties occur; that is to say, those framed or half timbered houses in which wood is employed in connection with brick, and those in which it forms the only constructive material, and no stone or brick is introduced. To this latter class belong the ancient wood monuments of Norway and the houses which occur in mountainous districts, of which Switzerland, and especially the Bernese Oberland, offers the most beautiful examples. Consequently the designation, Swiss houses, or Swiss cottages, is that which is most generally applied to the entire class of houses which are peculiar in a more or less similar shape to other mountain districts, especially the Tyrol. The Russian block or log-houses must also be mentioned as being constructed on a similar plan.

The wood buildings of Norway lay claim to a certain monumental and historical importance, partly because they belong to the oldest class of buildings of this description, and partly owing to the purpose for which they were erected, namely, to serve as churches. The case is different as regards the merit of their artistic construction and beauty of shape, in both of which points the standard attained

is not a high one, as is shown by Fig. 617. The details principally show traces of the architectural styles prevalent at the time of their erection, viz., the Romanesque and Byzantine, while the main forms must be considered as the result of a severe climate. The perishable nature of the material employed was also naturally prejudicial to any advanced and regular development of architectural skill.

Fig. 617.



View of the Wood Church at Burgund.

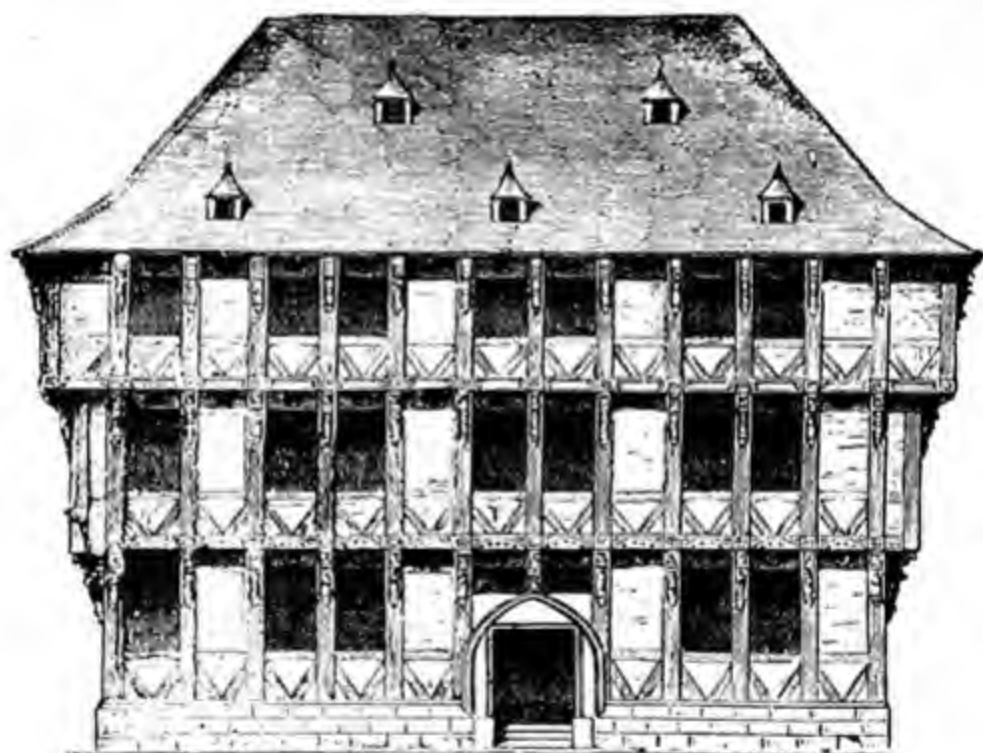
From these causes the whole design assumed a pyramidal shape, whilst the climate necessitated a mode of construction which is peculiar to the buildings in question. As a protection against its rigours the structures were surrounded by covered passages ornamented externally with those little arcades which are a distinguishing feature of the Romanesque style, whilst the roofs were necessarily very steep in shape on account of the heavy falls of snow, and were covered with wood shingles, tiles, or slates. The form of construction is rather rough, for the corners are generally formed of rude logs, whilst the walls between merely consist of upright boards jointed to one another. Churches of this description are known in Norway by the name of Fascine Churches. Although the construction is thus artless, yet an effort to enrich the whole by individual details and by the employment of painted embellishments is frequently to be noticed. This is especially effected by means of arabesque-like carvings on the doorways and gables.

In the interior, columns wrought out of trunks of trees, support either a barrel vault which lies over the nave of the building, and is constructed with boards, or else a flat roof of the same material.

The capitals of these columns, when they do not consist merely of rings, are generally an imitation of the Romanesque cubical capital. The churches are usually dark, inasmuch as the only light which they receive is from little windows let in high up in the structure.

Framed houses are especially numerous in the Harz Mountains in Germany. In the oldest specimens the ornamentation has affinity with the Gothic style, whilst the larger number show traces of the later Renaissance. The most characteristic feature of these buildings is that the storeys are not placed perpendicularly one above another, but that each overhangs the one immediately beneath it (Fig. 618). This overhanging construction gives scope for much

Fig. 618.



Front of a Bay-work House at Halberstadt.

external enrichment, and especially for that which forms the peculiar ornament of these buildings, namely, the carved or fluted brackets which support the walls of the storey above, and the spaces between these brackets (Figs. 619 and 620). The wall-space below these is not always fluted or carved, but sometimes covered with a more or less ornamental outer coating of upright or sloping timbers (Fig. 621).

It was by endeavours such as those just mentioned that an attempt was made to bring wooden buildings within the range of

Fig. 619.



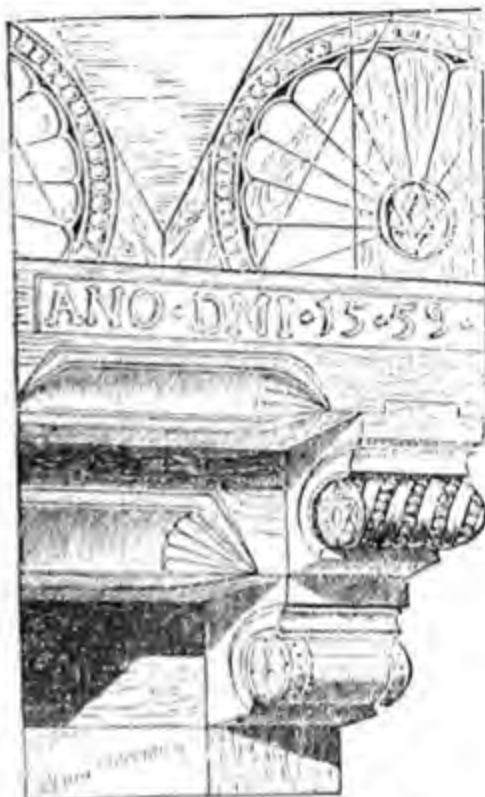
Detail of Fig. 618.

Fig. 621.



Portion of a Bay-work House.

Fig. 620.



Detail of a Bay-work House.

artistic productions, and though the buildings remained tasteless, still an attempt was made to gain enrichment by chamfering the projecting ends of the beams, and very frequently by filling in between the timbers with courses of various kinds of stone. This kind of architecture is frequently employed both in town houses and public buildings, as, for instance, in the Town Hall at Wernigerode; and in a simple form in domestic buildings in the country.

The third class of timber buildings

which has to be described is the so-called Swiss-Cottage style (Fig. 622). This class belongs exclusively to the country in contradistinction to the town. It is only quite lately that its application has

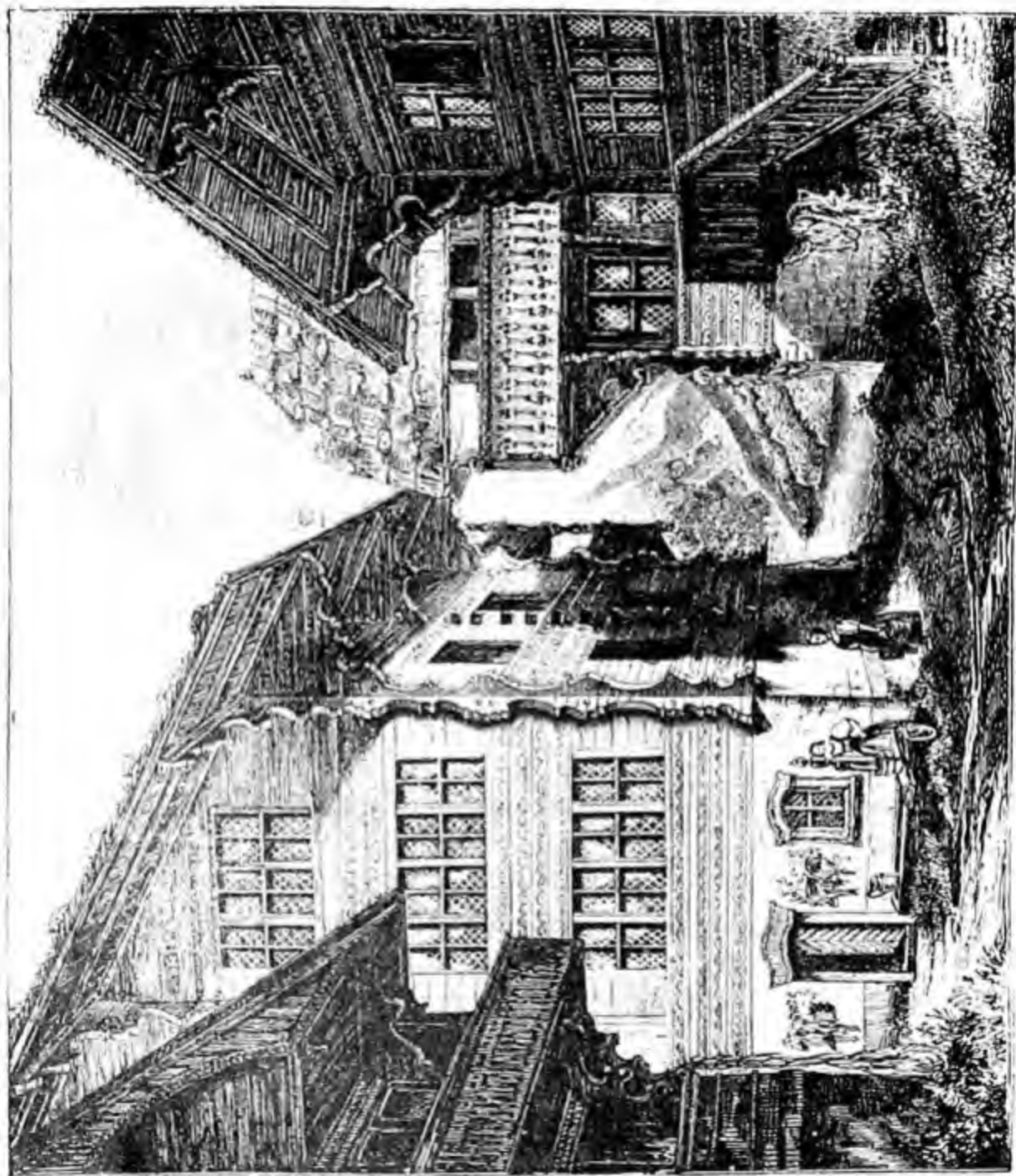


Fig. 622. Group of Swiss Houses.

been extended to other purposes, as for example, (and in combination with framed half-timbered construction) to railway-stations, &c.

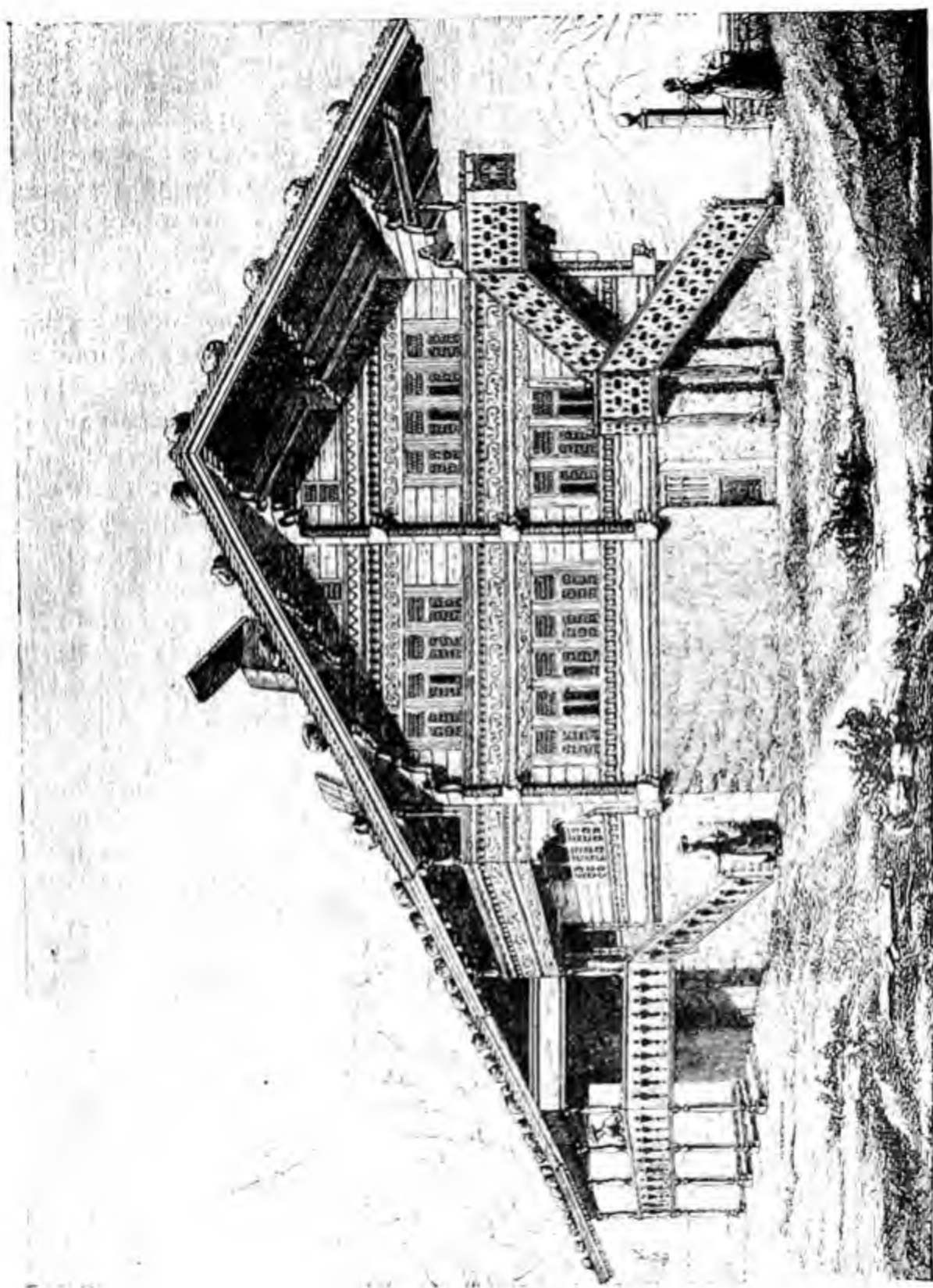


Fig. 623. Swiss House in the Canton of Berne, Iseltwald.

The external walls of Swiss houses are, as in the case of the log-houses, generally formed of trunks of trees arranged horizontally and overlapping one another, the interstices being closed up and daubed over. At the present day, however, solid walls are of frequent occurrence, or, at any rate, the lower part of the house is frequently solid. In the first-named mode of construction the trunks are either carved and left visible, or they are cased by wrought boards.

The main characteristic of these houses is the broad overhanging roof, which projects over both the gables and the sides, and underneath which elegant galleries with carved wooden staircases are sheltered. These galleries frequently occur one above another in the different storeys of the building, and they sometimes run all round the house, though they are more frequently met with on one or two sides only. Wooden steps generally lead up to these galleries from the outside, when they are not high. The rafters of these projecting roofs are left bare, and generally carved in a curved shape. The gables and the eaves of the roof are lined by boarding carved with various ornaments, which materially tends to increase the picturesque effect and the elegance of the building. The roof is not steep in its pitch, and is covered with wood, slate, or slabs of stone.

Although the characteristics of this class of buildings are generally uniform, yet shades of difference occur here and there. These deviations are perceptible in the various countries where wooden houses are met with, and are found even in the different cantons of Switzerland. It would, however, carry us too far to enter more fully into these various points of difference. Fig. 623 exhibits a characteristic example of one of these Swiss-cottages or *châlets*.

IV.

THE ARCHITECTURE OF THE PRESENT DAY.

§ 386. All the styles of architecture which prevailed in past times that have any claim to artistic merit having been now described, it only remains to make some allusion to the styles which exist in our own day.

The present age has no essentially characteristic architectural style. Consequently it is only possible to mention the various efforts which have been made by different persons: by some, to exclusively assign one of the historic styles to our own times, by others, to introduce a style altogether novel.

Towards the end of the last century a new artistic impetus was aroused, which was called into existence, and favoured by the scientific investigation, and survey of Grecian architectural monuments, particularly that carried on by Stuart and Revett. An attempt was made to abandon the Roccoco forms and the superfluous ornamentation which had hitherto been prevalent, and to return to a pure classical style of architecture. This effort, however, was mainly confined, as has been mentioned in Section 384, to an imitation of the leading architects of the fifteenth and sixteenth centuries, such as Palladio and Vignola. Simplicity of design was the main object aimed at, combined with a tendency to dispense with all unnecessary embellishment. This second Renaissance greatly resembled the first, but with the one distinctive difference, that whereas the poetic sentiment of a flourishing and picturesque age pervaded the creations of the former Renaissance period, the second return to the antique was subjected to an extremely pernicious influence from the totally vitiated taste and deteriorated artistic proclivities of the epoch in

which it sprang into life. Consequently, up till the first decades of the present century, architectural productions fall considerably short of the relative perfection and purity of their prototypes.

§ 387. Contemporaneously with the tendency which has just been alluded to there arose, beginning with the second decade of this century, a revived attention to the artistic productions of the Romanesque period, which had hitherto met with but little consideration. This soon surpassed due limits. An effort to attain universality was, however, perceptible, and an endeavour to appropriate and benefit by the results of art in all ages and amidst all races of man. It is this universality which mainly conduces to deprive the architecture of the present century of a definite and distinctive tendency, for all the structures of antiquity, of the Middle Ages, and of the Renaissance, are alike considered worthy of imitation, without any consideration being paid to their original signification or intention.

§ 388. It was only in the second quarter of the present century that progress towards a more genial and at the same time more intelligent application and treatment of classical architecture became perceptible. This was brought about by a course of study of the architecture of former ages, as well as by the publication of numerous and valuable works bearing on the subject. In this phase the buildings carried out in France and Germany are the only ones which can be considered important as examples. In England, Grecian models became the great objects of imitation, but the productions are for the most part unsuitable and tasteless, and also display a false appreciation of the spirit of Grecian architecture. The Roccoco style of the Italian Renaissance is that which is now generally preferred by English architects, a fact which may be attributed to defective artistic training, combined with the tendency of the national taste.

§ 389. No artistic progress was perceptible in Italy during nearly the first entire half of the present century, although she is the country which witnessed the resuscitation of modern art. Little that was new or original was produced: the creations of Palladio served as models for tame imitation in public buildings, as the Roman palace-architecture did for private.

Where the Roman palace-architecture serves as the model for numerous buildings of modern times, its treatment, without being original or imaginative, is more interesting than formerly, and, as a rule, correct. In the latter respect they may be favourably contrasted with many civil buildings in Germany.

If the effect is not so imposing as was that of Roman palaces of the fifteenth and sixteenth centuries, the cause lies chiefly in the smaller dimensions of the buildings required by the circumstances of modern life; and it is worth notice that in the absence of so imposing an effect of size and proportion, it is necessary, if the façade is to please and interest, to enrich and enliven it with sculpture, which, however, in no way implies that the building should be overdone with such decoration as is too often to be seen in Germany. In the modern buildings of Italy the influence of the older ones standing in the same neighbourhood is traceable.

§ 390. In France and Germany the influence of the schools became very considerable, and within the last ten years has given rise to several different and coëxistent subdivisions of the art.

The French school of Durand was the most general and widely extended of these. It endeavoured to lead architecture back again to the Italian Renaissance, and the study of ancient Roman monuments, which were employed as models, was its foundation. A certain rational treatment is peculiar to this school: its tendency is rather to work out new designs and to form systems than to promote the expression of the imagination and æsthetic conceptions.

Classical architecture was diffused in Germany in a more partial way and with a deficiency of spirit by the school of Weinbrenner. The method of this school consisted in indiscriminately introducing columnar porticos, and especially in forcibly combining modern architectural requirements with the temple forms of antiquity, after the manner of Palladio; with this difference, however, that in the Italian productions of this description a certain skill was associated with taste and a feeling for fine proportions, whilst Weinbrenner's German school and those architects who followed in his footsteps, cannot boast an equal share of these merits.

§ 391. In France the principles of the school of Durand, which were no longer in accordance with the artistic conditions of more

modern times, have gradually yielded to a less restricted acceptance of antique forms in the best spirit of the Renaissance. This was first effectuated, in a restricted way, by the influence of the school of Percier (as early as the first quarter of the present century), which has been preserved up to the present day in the teaching at the main architectural school of France (*L'Académie des Beaux Arts*). But still the mode of teaching which is carried out in that institution for the training of architects is not that which expresses the French architectural taste of the present time. The latter has long ago emancipated itself from the fetters of the school in the case of the most noteworthy architects, and executed its best works in accordance with the spirit of the Roman Renaissance, so that the details appear excellent both in conception and execution. Inasmuch as fashion unfortunately exercises a certain influence over art, the preference now exhibited for the Roccoco taste in furniture, implements, and utensils of all kinds, draperies, &c., has extended to the Roccoco architecture of the sixteenth century, and especially so in decorative undertakings.

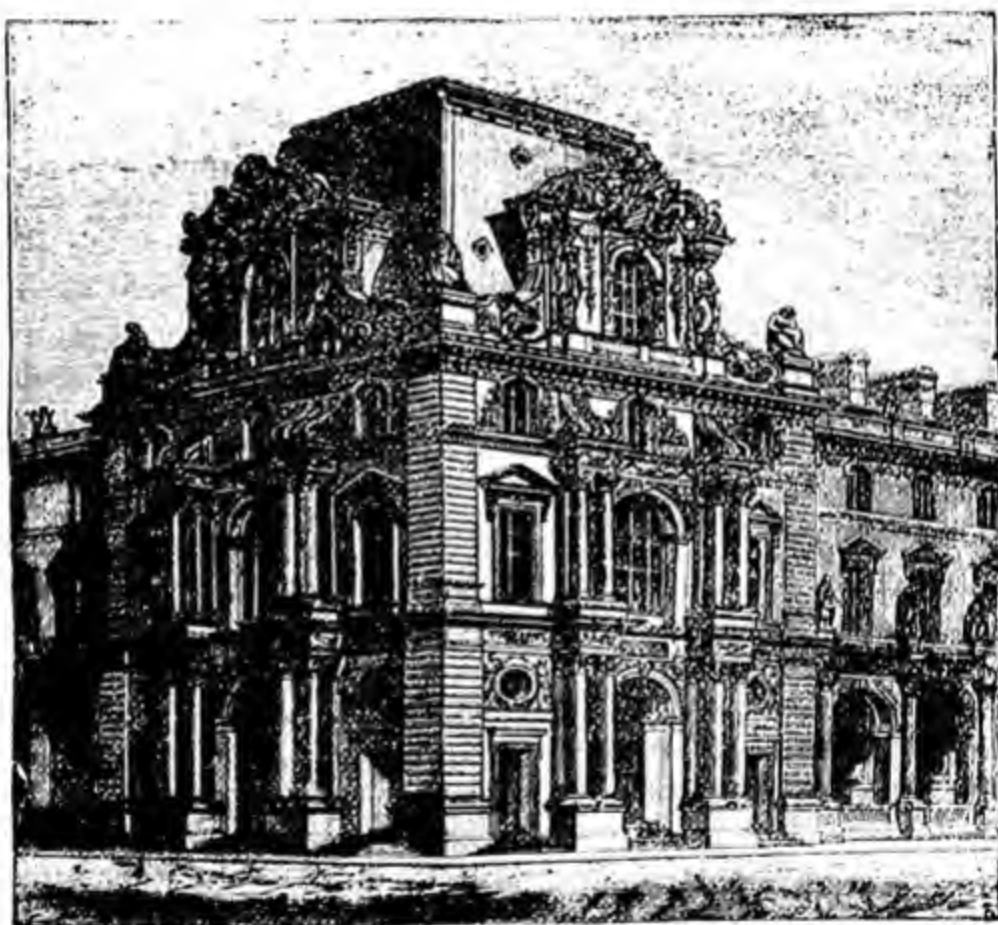
The modern architecture of Paris consequently displays on the one hand an application of the Roman Renaissance of the sixteenth century, whilst, on the other, the native architects, such as Philibert Delorme and Lescot are taken as models. At the same time a treatment of details has been resorted to, which is based rather on the study of ancient Grecian and Etruscan art, as well as on the Pompeian form system which owed its origin to Grecian art. This was mainly brought about by the influence of the architects Duban and Labrouste, the latter of whom was the builder of the Library of St. Geneviève. In addition a wider field was opened to the designer of plans than existed at the time when precedent was more stoutly adhered to, and more play was consequently given to the resources of modern constructive skill. In this phase of art a certain moderation in ornament was aimed at and was sometimes combined with a studied simplicity of forms.

But this tendency is not universal in its application: on the contrary, the change from the pure to the later Renaissance, which was formerly seen only in individual instances, has now received a certain extension. This is mainly owing to the key-note struck in

the New Louvre (Fig. 624), begun by Visconti, but finished by another architect. Although it is true that the new building conforms in general to the architecture of the Old Louvre, yet still an increase rather than a decrease is to be perceived in the effort for picturesque effect, in the licence of the Roccoco style, and in an unstructural treatment of individual forms and ornamental parts.

It may even be said that the Roccoco style of the time of Louis XV. with its wonderfully curved detail-forms, pervades to a comprehen-

Fig. 624.



Corner Pavilion of the New Louvre.

sive extent the architecture of both public and private buildings. In the case of the latter, it is not only the rich houses of the aristocracy in which the splendour and luxury that are peculiar to the style are exhibited, they also occur pretty frequently in the ordinary

ground-rent houses, in consequence of fashion and taste. On the other hand, the earlier manner based on the best Italian Renaissance examples, of which the façade of the Palais des Beaux Arts is an example, is now scarcely ever employed, or, at the most, only in single instances.

Recourse has also been had to the style of Louis XIII., but still only in one secondary detail. This was the adoption of the combination in exteriors of blocks of bright sand-stone with red brick, which was especially characteristic of the style of Louis XIII. The main walls were in this style, constructed smooth and with neatly fitted bricks, whilst the mouldings, the architraves of the windows, and the quoins were carried out in hewn-stone. Ornamentation was not introduced, or, at most, very sparingly, whilst the simply constructive element was predominant. It is mainly to the pleasure afforded by a change of materials and to the fact that it was a resuscitation that the popularity of this generally tasteless mode of architecture must be attributed, as there was no pressing necessity to replace building-stone, which forms the customary and most easily procured material at Paris, by brick. Brick, in fact, should only be regarded as a succedaneum, or make-shift, where stone is wanting, or only to be procured at a great expense.

The Gothic and Romanesque styles are also employed for churches, but for churches only. But the modern Gothic churches in France, as in other countries, are not to be considered as an expression of the architectural creation of the present day.

Future inquirers will find little in them upon which to found an architectural style of our present century, or even any indications of independent design such as lies at the root of our structural endeavours in other directions.

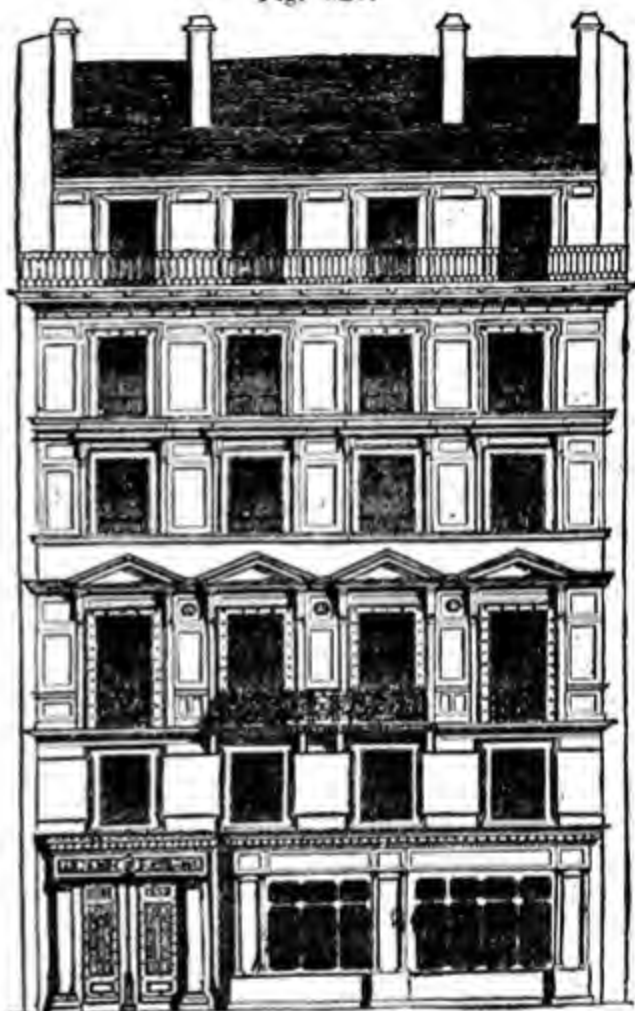
To return to the various styles employed in secular buildings at Paris, it must next be especially remarked that French buildings up to the very latest time are distinguished by high roofs, and consequently by very high chimneys, and therefore though the other details of the architecture correspond with those employed in the buildings of other countries, yet the entire impression is totally different, and the structures form a class that is essentially French.

The French town houses differ, moreover, essentially in entire design, which influences their style, from those of other countries.

This remark does not apply to those houses which are calculated for one family only, nor to the palatial residences of the nobility and plutocracy, which the French call *Hôtels*. This difference partly consists in the universal employment of the ground-floor as shops, which are only separated from the street by an opening which is glazed over and supported by invisible iron girders. The whole façade consequently appears rather to be suspended in the air than supported architecturally. Over the shop there is almost always an *entresol*, that is to say, a low storey between the ground floor and the first storey. The restriction to a certain height which the

façade may not exceed has a determining influence on the form of the topmost portion of the building, inasmuch as above this height the façade is terminated by an offset which slopes backwards over the upper storey (Fig. 625). Projecting balconies are, moreover, usual along the whole length of the façades, marking the divisions into storeys. When these balconies are not met with, the windows of each storey come down to the top of the storey below, or at any rate nearly so, and have iron balustrades in front of them; this construction is partly owing to the storeys from their great number being

Fig. 625.



Façade of a House in Paris.

so low that without this remedy the windows would appear too small and badly proportioned. The lowness of the storeys necessarily exercises a prejudicial effect on the architectural beauty of the façades; so that it is difficult to impart any structural significance to the houses, which consequently only convey any sense of beauty through their details.

The striving after new forms and unusual combinations which ever and again appears in Germany, but which was formerly foreign to the French mind, is now represented in a certain class of Parisian buildings by an unusual distribution of the features in the façades, and by the peculiar form of individual parts and their profiles. But still the fact must not be passed over, that in France this striving is based on classical studies. These attempted innovations consequently, as a rule, only occur in the case of those buildings in which the spirit of the Renaissance or of ancient Grecian forms has maintained its influence on the architecture.

Owing to the endeavour to obtain uniformity and to be subservient to recognized rules, extravagant mixtures of style are guarded against. If therefore, on the one hand, the productions inclined at one time towards stiffness and severity, or on the other hand, and more recently, seem ready to fall within the precincts of the Roccoco style, still the first *sine quâ non* for structural expression remains, namely, harmonious unity of style, even in those cases in which the style that has been chosen may appear objectionable.

The ornament generally displays good taste, except when the Roccoco style is resorted to. The endeavour was formerly manifest to unite the advantages of antique ornamentation with the best Renaissance style, whilst now the capricious and effect-seeking enrichments of the Roccoco style are employed, but still they are in accordance with the style itself. In the execution of the buildings Paris enjoys the great advantage that most skilful hands are always at command for those operations which necessitate artistic treatment, as also for those which exhibit a specialty in any particular branch connected with building. Besides this, the freestone of which the buildings are constructed is very easy to work; so that all the architraves, mouldings, and ornaments are carved on

the façade itself, and therefore their effect can be accurately observed and arranged to suit the position of the spectator.

The newest and most important building is the new Opera House at Paris, the ground-plan of which is shown by Fig. 626, whilst Fig. 627 presents an external view.

The competition which was announced for the plans for this building brought out at the time the most eminent, artistic and architectural talent of France, and aroused a very general and lively interest in the result: inasmuch as an architectural *chef-d'œuvre* was to be produced, such as Paris did not possess before, and one in which the architecture of the present day was to make the utmost possible effect to build a theatre, which in every respect should be worthy of the metropolis of the world, and should, thanks to the almost unlimited means at disposal, be the most perfect of its kind.

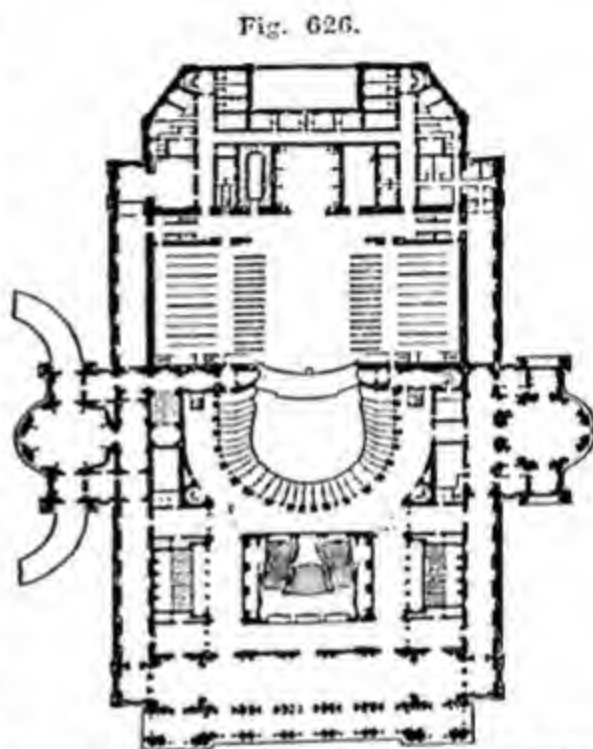


Fig. 626.

Ground-plan of the new Opera House at Paris.

In one point only, however, is the result to be considered as attained and the expectations formed to be realized, namely, as regards its scenic purpose, and the very effective magnificence of its vestibules, staircases, and foyers. If in this respect the new building is to be considered as unrivalled, still the whole exterior ought by no means to be viewed as the ideal of modern architecture as we should expect to see it realized. A structure, it is true, has been reared, remarkable for richness and splendour, but destitute of that elevating impression and that nobility of expression which ought to be the first necessity in a structural edifice of the highest æsthetic significance. This shortcoming is mainly to be attributed to the architectural arrangement of the façade, together with the treatment

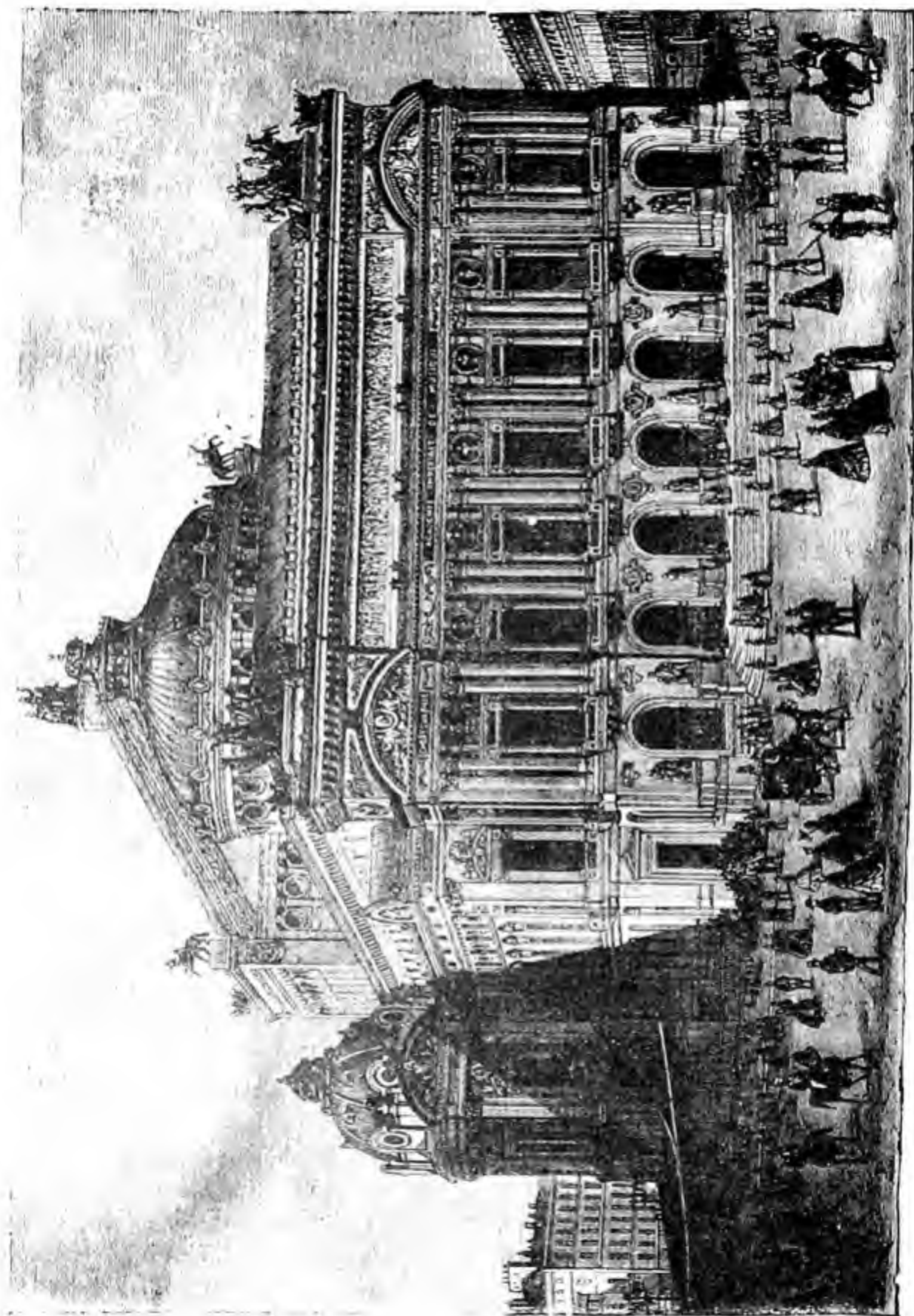


Fig. 627.—View of the Opera House at Paris.

of style and excess of ornamentation, which are mainly borrowed from the Roccoco style, as well as to the circumstance that the front, which is deprived of repose by the most various materials being employed in the ornamental parts, is not sufficiently structurally connected with the sides, and so forms no perfect whole with them.

The deficiencies which have been pointed out are noteworthy as bearing witness to the fact, that it is no good sign of the status of the architecture of the present day in Paris, and consequently in France, that for a building of such great importance a stricter consideration was not paid to pure treatment of style and to monumental expression, such as might strike the beholder's mind by nobleness of conception. It is, on the contrary, manifest how little all the richness of the detail forms of the Roccoco style, and the costly materials employed in the execution, avail to conceal the defects in the architectural composition, and redeem the lack of dignity and noble harmonious effect, but that rather the heterogeneous nature of the materials, such as stone, various kinds of marble, bronze, and gilding disturb the impression; and will prove prejudicial to a good effect being produced until the new and glittering parts have been toned down by time; and this sobering effect of exposure has in fact already begun to exert its influence during the short time that has elapsed since the unveiling of the façade.

§ 392. In Belgium the Roman Renaissance was introduced about the same time as in France: but an unmistakable distinction is visible between the two styles. The buildings in Belgium have a certain stamp by which they essentially differ from those of France; in fact, the whole style might be designated as modern Belgian. The peculiarity of the treatment lies mainly in a predilection for that Renaissance which is called the Roccoco style in conjunction with heavy and often very capricious forms of detail, designed to produce striking effects. This is the case even with the internal decorations, which are often very skilfully managed; but still the details are for the most part heavier and more robust than those that belong to the best Renaissance style. Fig. 628 shows this peculiarity, but it is somewhat less marked than in many other instances.

§ 393. In Germany the school which was founded in Berlin by Schinkel (1781-1841) corresponds to the revival of French architectural activity. The object of Schinkel was tastefully and worthily to adapt

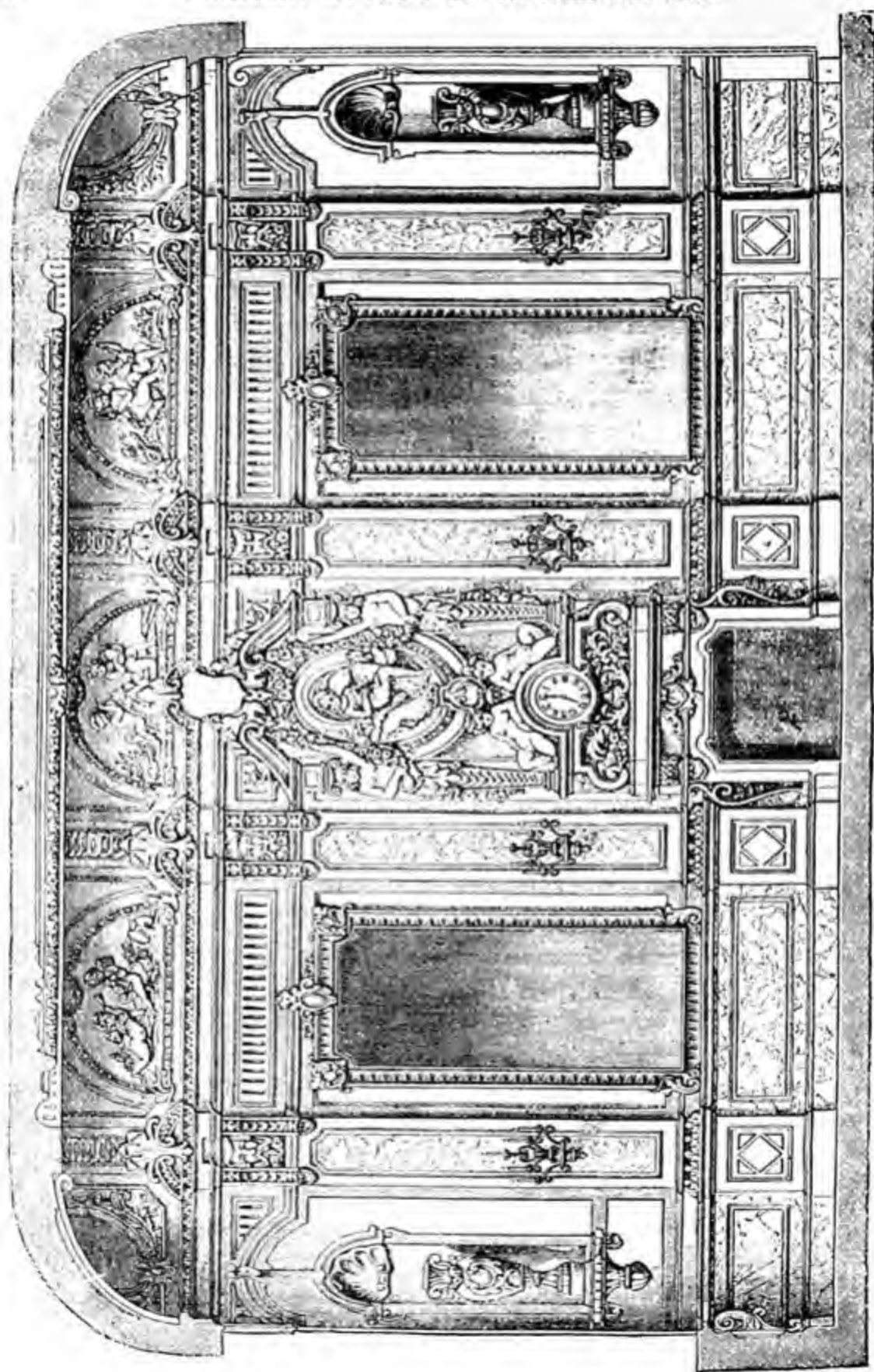


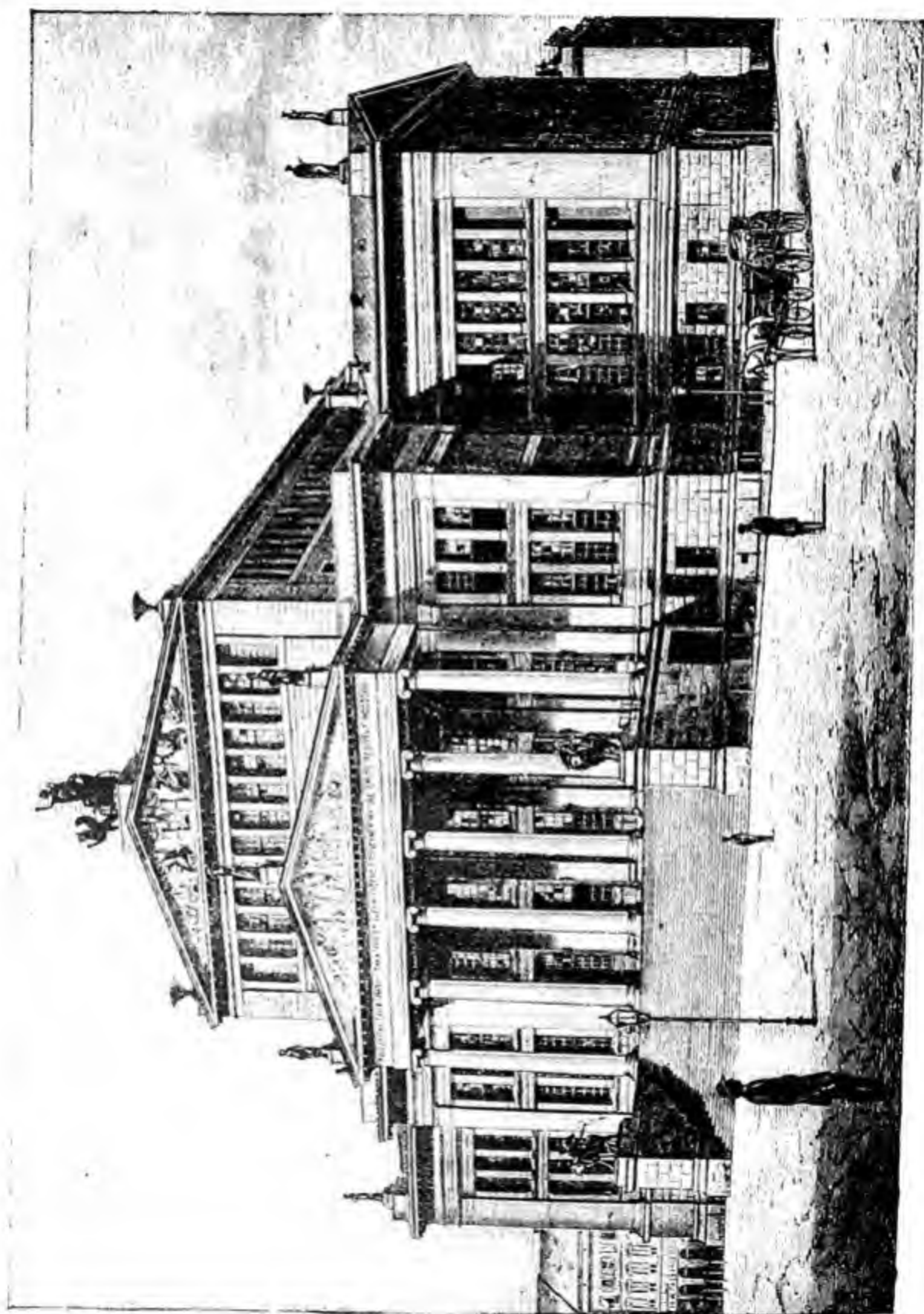
Fig. 623. — Decoration of a Belgian Salon.

classical architecture to modern requirements, and to fuse them harmoniously, and also to produce new creations in accordance with the Greek spirit: whereas up till his time the most considerable buildings in the so-called Roman style in Germany were composed only of conflicting elements in a way which by no means corresponded with the purposes for which they were intended.

§ 394. Simultaneously, whilst some considered the application of classical architecture as alone valuable, others turned back to the Romanesque style, and recommended it as the only one that was suitable for the requirements of the day. Speaking generally, during the last few decades a very remarkable uncertainty and vacillation are noticeable in the application of all the styles that have been hitherto in use. In contradistinction to France, where all architects come from one and the same training-school, and embark on the same course to acquire a thorough knowledge of their profession, in Germany the various architectural schools render a uniform artistic education impossible, and, as is natural to suppose, promote the most varied views: for the method of instruction and the subject-matter taught themselves differ, and so do the degrees of artistic knowledge possessed by the teachers who influence by their words; and the same differences exist among the architects who are summoned to carry out the most important buildings, and so to exert influence by their example. These things determine the course and direction of the whole German school.

§ 395. Thus some considered the revival of the Romantic school (and of the Byzantine school as regards details), as the sure remedy for modern architecture; for they were of the opinion that the Romantic school was one which had not attained its highest degree of perfection, and was therefore capable of a further development at the present day. Others again considered this style so complete and suitable for modern times that they thought that all further development could be dispensed with, and that it could be applied as it then existed.

The head-quarters of this Romantic-Byzantine school was Munich, and Gärtner was its principal advocate. The Grecian and Roman architecture, which had previously been fostered by Klenze, now fell into the background, and Gärtner, by his pupils and his creations



extended the influence of his school over the south of Germany, especially to Austria, but not to any extent over northern Germany, where the Berlin school was all influential.

§ 396. The Berlin school, whose founder was Schinkel, the architect of the noble Berlin Theatre (Fig. 629), and of the Museum (Fig. 630), which is noteworthy for its magnificent façade, exhibited a decided inclination towards Grecian architecture, and strove to attain a certain purity of form, and delicacy and elegance in details, which were for the most part carried out in the Grecian style. He had to contend against a deficiency in building material. Owing to want of building-stone, the mouldings, and indeed all the architectural details, were unavoidably carried out in stucco: nor was this all, but in order to give the same more durability, they were made to project as little as possible. Consequently this architectural style, with the exception of some few public buildings, seemed flat and wanting in power, especially in the case of private dwelling-houses, and frequently presented the appearance of pasteboard-work, or cabinet-work, rather than of a structural edifice. The facility also which stucco afforded for enriching the façade, caused more attention to be paid to decoration than it was entitled to, for ornament should always be kept in subservience to the main and constructive architectural forms.

This style, which was founded by the Berlin school, assumed, moreover, in the hands of Schinkel's successors, a graceful and sportive rather than a massive and settled character; this was owing to the absence of any powerful and uniformly prominent leading idea. Even in the masses and principal forms there was an endeavour to attain a pleasing and picturesque effect rather than any attempt to develop a character of solid repose and dignity. In many designs, as for instance in villas and country-houses, in which such an arrangement and free treatment are suitable, the intention has been realised in a graceful manner.

Subsequently, however, the individual tendencies of the architects themselves, and partly other influences, as, for instance, the instruction in the architectural schools, gave rise to many modifications. It is particularly noticeable in the dwelling-houses, which are for the most part constructed in the Renaissance style, that the

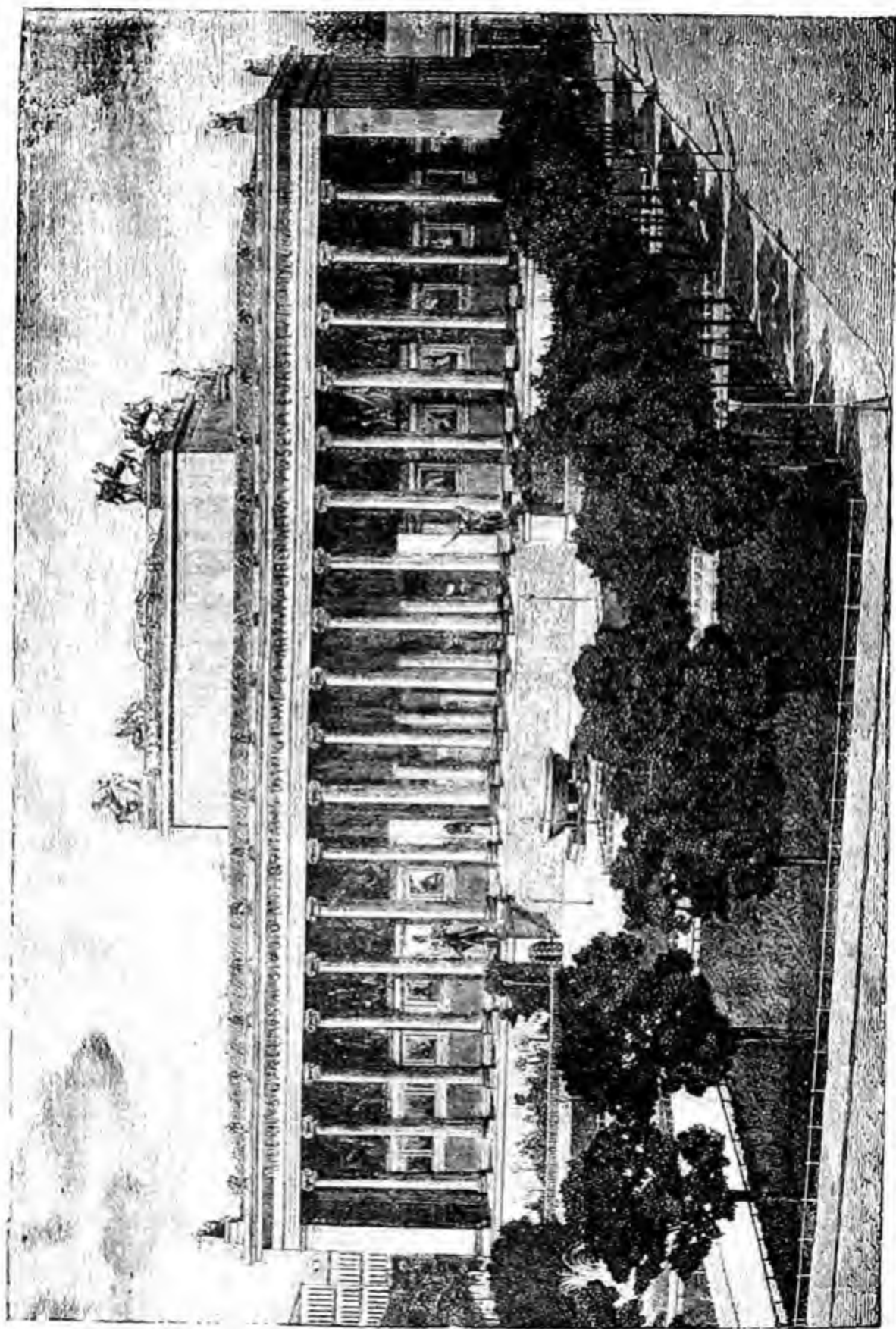


Fig. 630.—The Museum at Berlin.

flat treatment of forms which was peculiar to the early Berlin school has been superseded by a more or less vigorous one. In churches and other public buildings an attempt to attain constructive expression is recognizable, for plaster, and everything that conveys the impression of other materials and other constructions than the real ones are avoided, and brick is employed in its natural condition, partly after the manner and in the style of the Upper Italian, and partly after those of German mediæval buildings.

Although the list of architects who have distinguished themselves is a long one, yet the following may be mentioned by name, from their works being more locally characteristic of the Berlin school: Stüler, Strack, and Hitzig, to whom must be added a number of younger and talented architects, such as Ende and Böckmann.

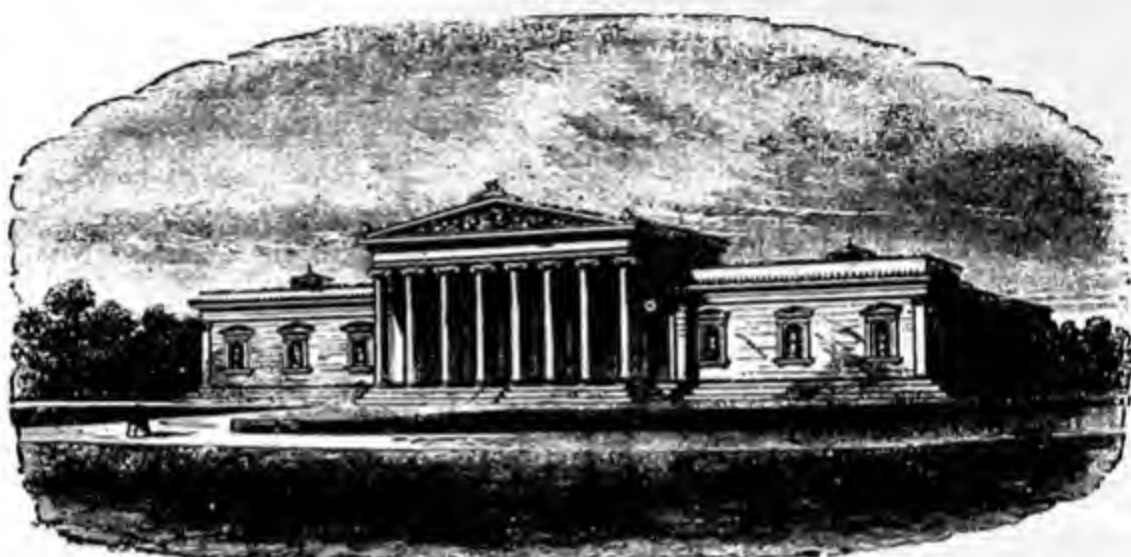
Upon the more picturesque than architecturally symmetrical designs of villas, Persius exerted an influence both by what he carried out, and by the unexecuted designs which he left. Schinkel did the same by, among other works, the summer-house at Charlottenhof.

What still distinguishes the Berlin school as the most prominent amongst German architectural schools is the visible influence which the study of Grecian forms, as inculcated by Schinkel, has exercised on the elevation of taste, and consequently on all details, especially the application of ornament. In this respect Stüler, the architect of the new museum, has shown himself worthy of the confidence placed in him, especially where grace and elegance had to be expressed, rather than dignity. These qualities are successfully displayed by many buildings, among them the new castle at Schwerin, which was, it is true, begun by the native architect, Demmler, somewhat after the style of the Château de Chambord of the Early French Renaissance, but was finished by Stüler, with the coöperation of Strack, so that the decorative finishing of the interior may be considered as the work of the two last-named architects.

§ 397. In contrast to the Berlin school is that of Munich, which was founded by Gärtner. Its influence, which was supported by the renown of many edifices constructed by this architect, such as the Library, the University Buildings, and the Ludwigskirche, extended over many other parts of Germany. Without being in

any way influenced by the works of Klenze, which are erected in the classical style, such as the Glyptothek (Fig. 631), the Pinakothek, the Pantheon, the Valhalla, and many others, Gärtner's pupils,

Fig. 631.



The Glyptothek at Munich.

as well as his pupils' pupils, continued in the course of Romantic treatment pointed out to them, and with few exceptions remained steadfast to the Romanesque style. The forms of detail, consequently, appear for the most part heavy and ungraceful, as compared with the purer feeling and more refined taste of the Berlin school. It is only very lately that an endeavour is perceptible at Munich, as, for instance, in the New Maximilian Street, to create something new, and avowedly to form a new style; but thanks to the great difficulty of the attempt, and the impossibility that, in the nature of things, it should succeed, the chief result hitherto has been to bring about a richly combined admixture of the elements of various styles, in which the Romanesque predominates. Harmonious construction is by no means the leading principle in these new buildings, and there is no realization of that elevating effect which depends on the repose of the massive parts of a structure conjoined with nobility of detail. Whatever the merits of these most modern attempts may be, they are not at all to be acknowledged as the praiseworthy expression of the era of a new style.

§ 398. Almost all the new buildings in Hanover, with the ex-

ception of the Lawes Theatre, which was completed at an earlier date, were constructed under the influence of the Munich school. This influence was at the commencement exercised directly, but was afterwards continued by the teachings and productions of architects of Hanover itself, sprung from that school. The tendency was for the details to become richer and more elegant, and materials of various kinds of colours were introduced for decorative purposes. A preference for the Gothic style is, however, now perceptible both in the instruction in the schools and in the buildings erected. The former is especially to be regretted, because a one-sided professional education is thereby provided for the young student of architecture, and he is prevented from gaining an unrestrained conception of the whole range of architecture, whilst at the same time the culture of taste at large is prejudicially affected.

In Dresden, owing to the method of instruction in the technical schools, as well as to the influence of the buildings, as, for instance, those by Zwinger, and the new theatre by Semper (Fig. 632), the Renaissance style is the one preferred by the architects who have been there educated.

In Stuttgart the more important architects have acquired their professional education partly in Paris, and partly by a persistent study of Italian buildings. The best of the modern edifices constructed in that city are similarly results of the study of the Renaissance, as, for instance, the villa erected for the King, when Crown-Prince, in the neighbourhood of Stuttgart, which is built with much taste and in accordance with the spirit of the style.

In Baden the architects Hübsch and Eisenlohr exercised a certain influence both as teachers and practical artists, and their efforts brought the Romanesque style into vogue. They aimed, however, less at a strict observance of traditional forms, proper to the style, than at an adaptation suitable to modern requirements and constructions. Instead of making the stylistic and æsthetic form of the building their study, this school distinguished itself by inscribing on its banner strict utilitarianism as its rule, and would employ for decorative purposes only those constructive features which were æsthetically suitable. Although any attempt to give prominence to the constructive element cannot generally be too highly praised, yet the

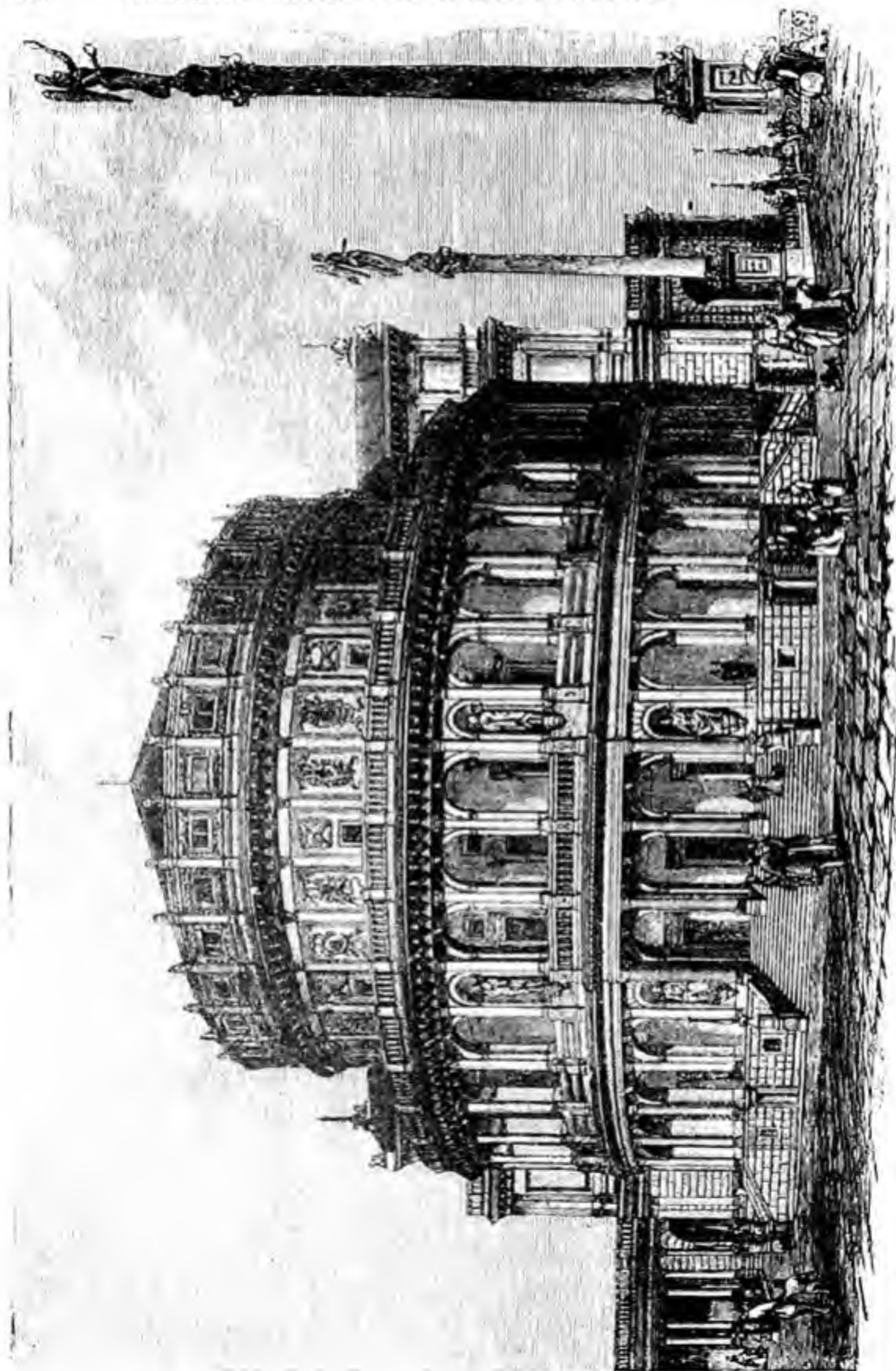


Fig. 632.—Theatre at Dresden.

Carlsruhe school has been reproached with having laid undue stress on this principle to such a point that æsthetic requirements have been sacrificed, and with having adopted a medley of styles, with the result that sufficient prominence has not been accorded to the symmetrical and organic execution of buildings, both as regards correct and harmonious effect in the whole, and refined taste in the decorative details.

§ 399. Vienna, owing to the removal of the ramparts and to building on the site of the glacis, has displayed within the last few years an unusual architectural activity. Owing to their considerable extent the character of the buildings is now more definitely marked and more clearly recognizable than it was formerly, when no particular school can be said to have been distinctly prominent, and when even individual splendid buildings like the Arsenal, being isolated, offered no scope for the development of an architectural manner.

In this city many individual tendencies are perceptible, but the predominant inclination is towards the Italian Renaissance. The new Opera-House, built by Van der Nüll and Siccardsburg, forms an exception to this rule, the design and forms of which were copied from the Early French Renaissance, with its narrow mouldings and flat elliptical arches. On the other hand, the models of the thirteenth and fourteenth centuries are chosen for churches built in the Gothic style. In its richest phase this is seen in the memorial church (Fig. 633), built by Ferstel; and in its poorer aspect, and divested of all the ornamental details necessary to produce a good effect, in the Lazaristen Kirche (Fig. 634), built by Schmidt, one of the most important representatives of the Gothic style, and at the same time an advocate in word and deed for its reintroduction.

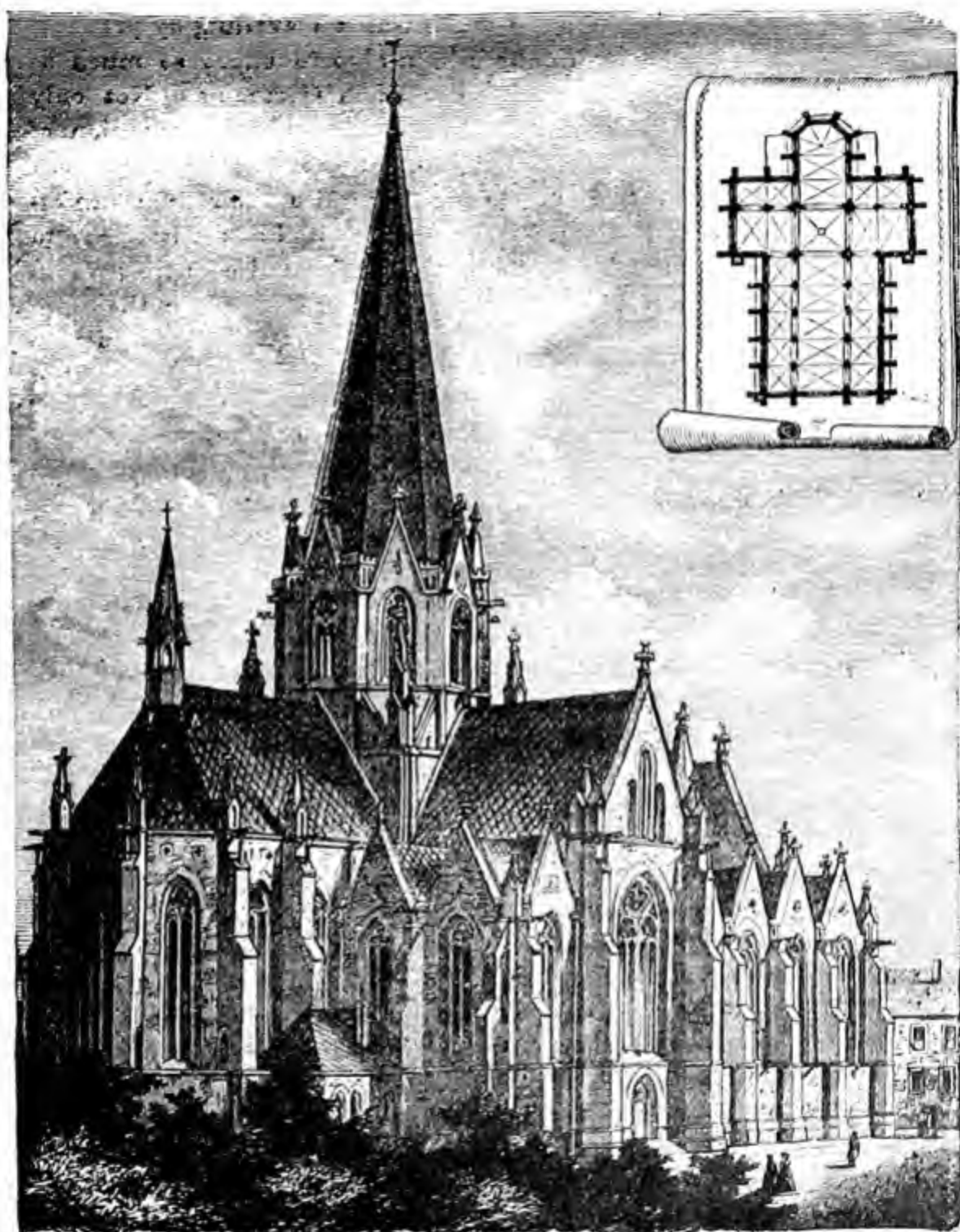
The dwelling-houses of the new quarter of the town are generally five storeys high, and externally present a palatial appearance in the richest style of architecture, with a large amount of ornamentation. The Renaissance style, with its various subdivisions, is generally employed; whilst the French Roccoco style is also now and then resorted to. In addition to the above-named architects, Hansen is also worthy of mention as a talented representative of the classical school.

§ 400. Besides the influence of those among the above-mentioned schools in Germany, which offer the most definite characteristics to



Fig. 633.—Memorial Church at Vienna.

Fig. 634.



Lazarist Church at Vienna.

our notice, viz., the schools of Berlin and Munich, individual efforts and independent personal studies made whilst travelling by practical and famous architects have nowhere been able to effect so much as regards the style of modern buildings as in Germany. Not only the architects who have been educated without the intervention of the before-mentioned schools, but even those who have received their elementary instruction in the same, acquire their final professional tendency after prolonged independence, and after studies from original architectural monuments in the places and countries where they were built. Developed and matured attainments are therefore called into play in determining whether this or that style is suitable for any proposed building, and, above all, definite and characteristic modes of treatment corresponding to the point of view and bent of taste of each artist, have caused the buildings of one to differ from those of another practising a similar branch of the art; and the natural result has been that many buildings have been erected dissimilar in style, but corresponding, each of them, to the requirements of the employment to which it is destined.

§ 401. It has been shown that during the present century the Roman, the Greek, the Romanesque Byzantine, and the Italian Renaissance of the fifteenth and sixteenth centuries have all served as models throughout Germany, whilst the Gothic style has also found hearty patrons and advocates. This latter style was particularly a favourite after the wars of Napoleon, owing to the national impulse to give prominence to all old-German elements and to introduce them into modern use. Since the most important buildings in Germany, especially sacred edifices, are constructed in the Gothic style, and inasmuch as this style attained its highest degree of development in Germany, it is easily to be explained how it came to be designated "The German style," and underwent resuscitation, when the enthusiasm for mediæval German life pervaded the minds of all men. But just as little as the gloomy spirit of the Middle Ages corresponded to our more enlightened times, just as little as the affected imitation of stiff German painters corresponded to the modern phase of taste after the knowledge of better works of art had been acquired, just so little could the fatuous assertion of Teuto-maniacs, who maintained that the Pointed Gothic style

was the most complete and most suitable for the present day, hold good its ground.

No doubt much that is praiseworthy has been effected in this direction ; but still these examples are only isolated instances as regards more important edifices. When the forms of the best models at hand were strictly adhered to, it is, except in individual instances, the form, without the spirit, which rises before our view ; that wonderful spirit which seems to lend such a poetic breath to the creations of the Middle Ages ; or, again, the attempts have proved failures, because there is no adaptation of the discordant æsthetic conditions of this style to the economical, technical, and practical requirements of our age. When the highly-gifted Schinkel only partially succeeded in attempts like these, it is not to be wondered at that less distinguished architects, who have but enjoyed a one-sided and deficient education, should not have attained satisfactory results in the endeavour to adapt this style to the every-day requirements of the present period. It cannot, however, be denied that the Gothic style is especially suitable for churches of the Catholic ritual, and that it is in connection with churches that it can be viewed in its most complete and satisfactory development. But still churches can be built not less sublime and adapted for religious worship in another style, as is shown by the Romanesque dome-churches and by the cupola-churches of the period of the Renaissance, especially the Italian. Even in the elaborate churches of the Jesuits, in the so-called Pig-tail and Periwig style, there is a certain harmony with the splendour which the Catholic ritual so readily develops.

The case is different with churches in Germany intended for Lutheran worship : the signification and employment of the choir and altar is totally different, as well as the position of the latter. The difference also in the mode of conducting the service has also to be taken into consideration, for in the German Protestant service the sermon constitutes the most important part. Consequently, good acoustic properties and a form favourable to them were essential. From this cause galleries arose, in order to have as many seats as possible in the vicinity of the pulpit. These galleries, however, form a feature which is extremely unsightly in a Protestant Gothic church, and one which can with great difficulty be brought into harmony

with the design of any Gothic ecclesiastical building. For these reasons it seems natural that recourse would have been had to the original Early Christian Basilica, as has indeed been proposed by Hübsch; either in the form that has been preserved to us at Rome from the first centuries of Christianity, or as it appeared later, in the Romanesque style, with its system of vaulting. In the enthusiasm for everything Gothic, which is grounded either on the picturesque effect of Gothic buildings or on mediæval life, it should not be forgotten, that in spite of the sublime impression which is conveyed by the slender proportions and remarkable height of the interiors of Gothic churches, the Gothic style rather opposes than furthers the above-mentioned conditions of Protestant worship. If then the construction of Gothic churches seems suitable for Catholic worship, it does not follow as a matter of course that that style is to be accepted for Protestant sacred buildings in Germany.

§ 402. Whilst treating of the subject of modern churches, it may not be out of place to say a few words about the style in which the numerous new synagogues are constructed. The Moorish style is that in which they are generally erected, but there is no substantial ground for justifying this selection.

The motives for the form of a building of this description may be historical, religious, or constructive. Taking the historical aspect first into consideration, it would seem natural that the Temple of Solomon at Jerusalem, described in the Bible, would be taken as the model for these buildings, in remembrance of the time when the Jews possessed an independent kingdom under their own kings. But the design of the old Jewish Temple was based upon a different order of things, and was calculated for the religious sacrifices that were so intimately connected with their worship. But in point of fact, after the Jewish kingdom was subjugated by the Romans, and the Jews themselves were led into Roman captivity and subsequently scattered all over the world, no other principle has been followed in the design of their synagogues, than to adopt the prevalent architectural style at the time existent in the various countries in which they settled.

Thus as synagogues were built in the Middle Ages in the Gothic style, as is still to be seen at Prague and elsewhere, and

it may naturally be taken for granted that the Romanesque style was previously employed, as it was for Christian Churches : that is to say, when the permission to build synagogues was accorded to the Jews in the state of oppression in which they lived. The case may also have been analogous in the earliest Christian times, and the basilica may also have been employed for Jewish worship ; whilst in the East the Byzantine style was doubtless had recourse to till it was merged into the Moorish. Naturally after this change, synagogues, like all buildings in the East, were constructed in the Moorish style, which for a long time was prevalent throughout the whole country. This is, however, no reason that for the synagogues of the Jews in the West, who were mixed up with the Christian population in political and social questions, the Moorish style should be considered appropriate ; and still less does this afford grounds for the pleasure palace of the Moorish kings of Spain, that is to say the Alhambra at Grenada, being taken as the model for the interiors of modern synagogues, whilst externally Turkish domes and other Oriental and Arabic forms are introduced, so that the crescent alone is wanting at the summit to mark the buildings as intended not for the religious rites of the Jews but of the Mohammedans.

There is thus not the slightest historical justification for the Moorish style being adopted as normal for Jewish synagogues : it has been merely a question of partiality and perverted taste, and a vague and unauthorised notion of imparting an Oriental aspect to the buildings ; the Moorish style is as inconsistent with the purpose of the building on religious grounds as it is on historical. The chief endeavour in Jewish as in Christian worship is that, over and above the observances necessitated by worship itself, the very fact of entering and staying in the sacred edifice should have a solemn and elevating effect on the mind. This end is not attained by Moorish buildings in the same degree as it is by other more completely developed styles, such as the Classical and Mediæval. This desired impression must be brought about by architectural form, and cannot be satisfactorily conveyed by the mere splendour of gilding or colouring which marks the Moorish style. But no further proof is required to show that no preference should be accorded to this style on constructive grounds, inasmuch as it is itself deficient in any real

constructive element, just as it is wanting in stylic signification when compared with the Classical as well as with the Romanesque and Gothic styles.

§ 403. Beside the prevalent schools of German architecture which have already been alluded to, various isolated tendencies of the most heterogeneous description are perceptible in different parts of Germany. This partly arises from the division of Germany into many different states, though late political events seem on the other hand to tend towards centralization. The consequence is that modern German buildings frequently exhibit examples of the most varied styles in close juxtaposition, as well as an ignorance of their different meanings and objects; in the same way as exotic and indigenous plants are often tended and reared in close proximity to one another in a conservatory from curiosity and fancy.

However much opinion may differ as regards the most suitable style for modern buildings, still a comprehension and an harmonious execution of the style selected is always attainable. Unfortunately in Germany there are numerous modern buildings which exhibit every possible form intermingled in the most incongruous manner, partly because the wished-for variety was in this way most easily attained, but principally from ignorance of the characteristics peculiar to each style. It also arises because, owing to a deficient or perhaps totally neglected training, architects have no æsthetic perception of the discordant result of arbitrary admixture of styles, and are themselves unaware whether architectural forms are introduced in an unsuitable position or in an abnormal manner. These evils are the most clearly perceptible in cases when the artistic element is subordinate to the bureaucratic; when the rank which a person holds in the official hierarchy is supposed to determine his artistic capabilities; so that often those who attain a high position through pliability of character or through interest, or who possess a certain plausible knowledge of departmental routine, are also entrusted with the construction of the most important architectural undertakings. So little was the necessity of the artistic element in architects appreciated during the period which followed the wars of the first Napoleon, that architectural plans, both important and unimportant, were generally handed over to military personages. It is not difficult to understand that the

cause of architecture and the progress of art was but little benefited by the works and designs of these worthy warriors! The only good which they effected was to display a hideous example for the students of a future age as to the pitch of degradation which must necessarily be attained when all knowledge of the essentials of architecture is wanting, and when all artistic training is considered superfluous. Even in the case of many architects of the present day much still remains to be desired: in their efforts to produce something novel they borrow some detail or feature of a style, especially the Romanesque, which they introduce in an inappropriate manner or in an unsuitable position, thinking in this way to exhibit to their fellow townsmen, who have never seen more of the artistic world than is contained by the precincts of their native town, something that may prove startling by its boldness and its novelty.

§ 404. In England, as in Germany, architectural activity has assumed various phases in modern times. With few exceptions, the numerous newly-constructed churches are built in the Gothic style of the thirteenth and fourteenth centuries; whilst public secular buildings, for which a certain simplicity is appropriate, such as school and university buildings, asylums, &c., as well as large country-houses, are either constructed in the Pointed or in the Late Gothic, or so-called Perpendicular or Tudor style, with flat-arched, curved, or even horizontal heads to the openings. Other public buildings, as, for instance, the Houses of Parliament (Fig. 635), which is the most important modern building in London, are carried out in this style. The Renaissance style has recently been frequently employed, especially for dwelling-houses.

The buildings which have been constructed in these various styles differ essentially from those which have been carried out in the same styles in other countries. In churches and other buildings erected in the Gothic style this difference mainly consists in deficiency of strongly marked architectural keeping, for both main and subordinate features are generally irregular. In most cases the whole group is highly unsymmetrical, and the tower is at one corner, by which a picturesque effect is aimed at (Fig. 636). The material and the mode of construction are generally left visible, and it is endeavoured to utilize them as ornament; and this not only externally but also in

the interior, where the beams and rafters of the roof are often left quite bare; they are even thus exposed where their appearance is not in keeping with the destination of the buildings.

Fig. 635.



View of the New Houses of Parliament, London, from the River.

The buildings executed in the Renaissance style are for the most part distinguished from those of other countries by the heaviness of

the architectural features, and by a character which is Baroque rather than pure and noble. The above-mentioned treatment of details gives

Fig. 636.



Memorial Church in Scotland.

a stamp to English buildings by which they are easily distinguished from those of France and Germany. This occurs perhaps in the most striking way in the case of somewhat earlier buildings, which

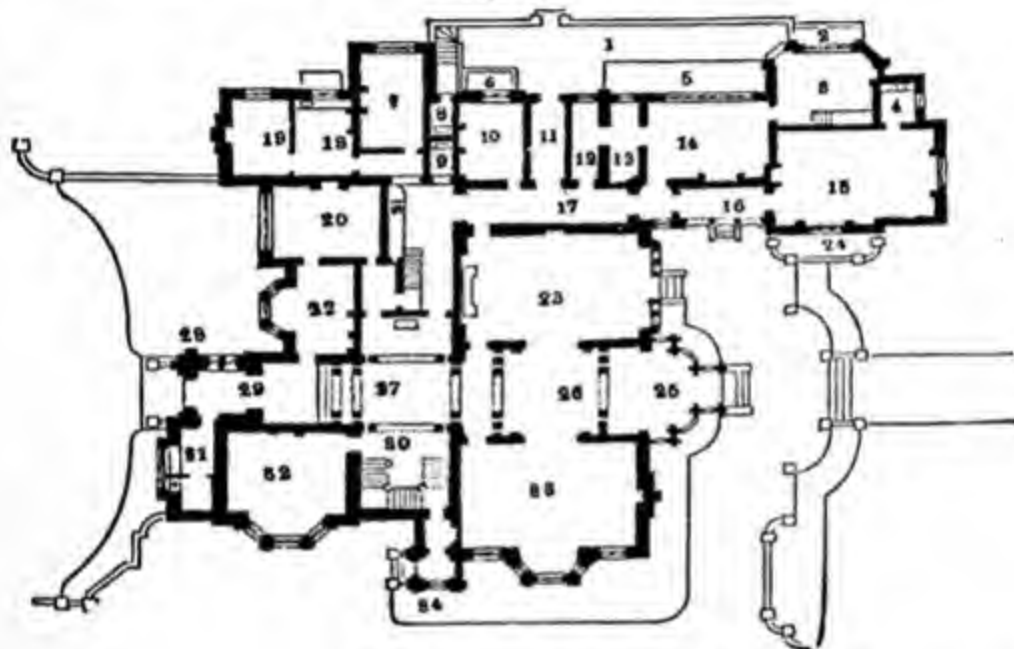
teem with copies of Grecian temple porticoes introduced on every possible occasion, without any organic connection with the other parts of the building. It was especially during the first quarter of the present century that columnar porticoes were generally considered as the one essential element in all good architecture; an element which had to be retained under all circumstances, without reflection as to whether the purpose and distribution of the building harmonized in any degree with its introduction. In the vicinity of these columnar porticoes, which were accurately copied from Grecian models, everything which it was essential should be of modern design displayed either a tasteless and often a singularly Roccoco form prejudicial of course to the entire effect, or an incongruous conglomeration of various Grecian buildings into one modern edifice.

It may be mentioned, as a proof of the improvement on the architectural taste that prevailed during the first quarter of the century, that a due recognition of Grecian architecture and of its pre-eminent beauty and sublimity, no longer prevented a recognition of the truth that an artistic design growing out of the real requirements of the building itself is to be preferred to the most magnificent portico, when the latter is not in harmony with the purpose and plan of the edifice. It cannot, however, be denied that in cases where a columnar portico can be introduced under these conditions, it is a most powerful agent in producing a noble and sublime impression; it is also self-evident that the abandonment of such a feature does not prove that it is impossible nobly to design the architecture of an entire building in the Greek style.

§ 405. It will not be inappropriate, with a view to gaining a complete comprehension of modern English architecture, to describe an English dwelling-house, which is different in its internal arrangement from those which prevail on the Continent, and in consequence of this difference acquires a different external character. Whilst in other countries the most varied forms of town residences occur, they are built in England, and especially in London, in accordance with one general and definite plan. It is only in large palatial residences and in country-houses that any deviation from the usual system is perceptible. The main principle of the arrangement is that as a rule each house is occupied by one family only. On the ground-floor is

the entrance-hall, on to which the dining-room opens, as well as a parlour or breakfast-room; the first floor consists of the reception or drawing-rooms, either one or more in number, whilst the second floor, and in large houses the third, forms bedrooms and nurseries. The kitchen, scullery, and pantry are generally in a basement, and receive light and ventilation by means of an area on the same level as themselves which opens on to the street and is covered by an iron grating which separates it from the pavement. The depth of the houses is con-

Fig. 637.



Country House in Dunsdale.

1. Yard. 2. Area. 3. Scullery. 4. Lavatory and W.-C. 5 & 6. Area. 7. Servants' Hall. 8 & 9. W.-C. 10. Housekeeper's Room. 11. Entrance. 12. Larder. 13. Pantry. 14. Kitchen. 15. Billiard Room. 16. Loggia. 17. Corridor. 18. Butler's Room. 19. Butler's Room. 20. Library. 21. Service. 22. Study. 23. Dining Room. 24. Area. 25. Conservatory. 26. Ante-room. 27. Saloon. 28. Tower. 29. Porch and Hall. 30. Staircase. 31. Cloak-room. 32. Morning-room. 33. Drawing-room. 34. Garden Entrance.

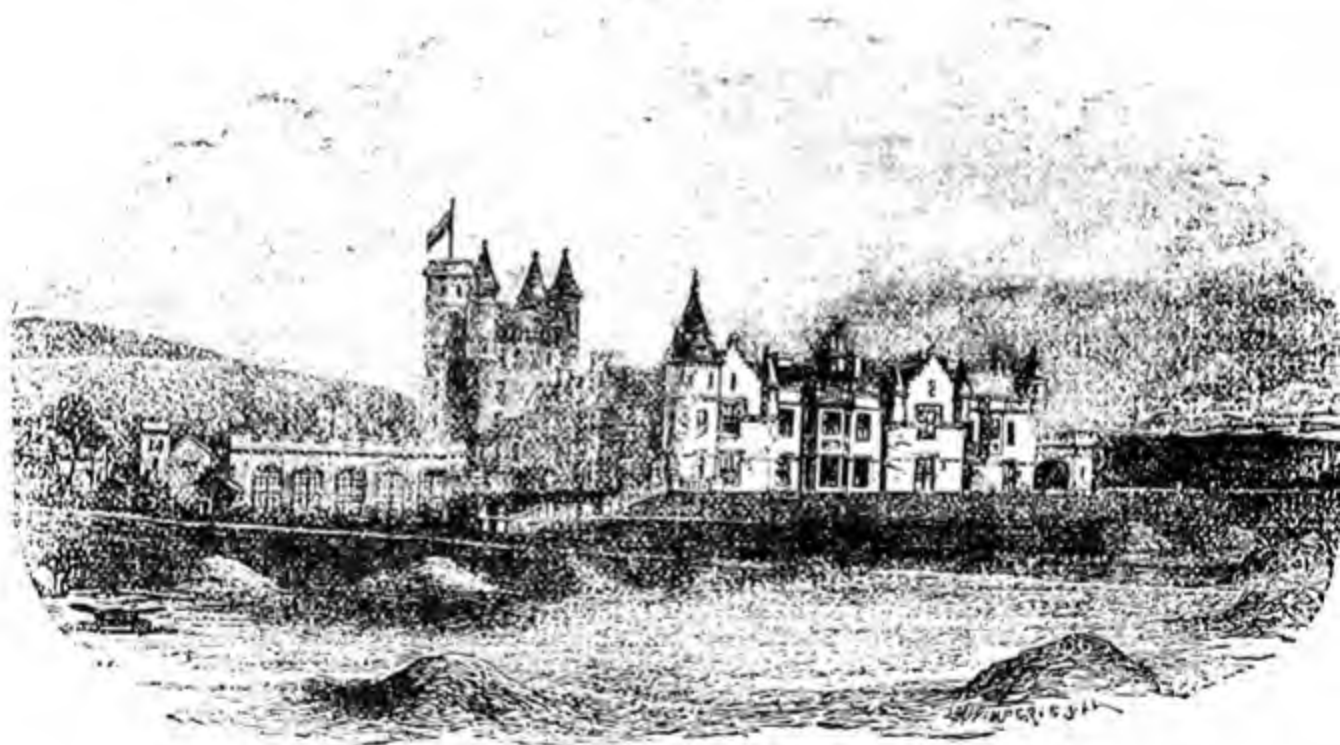
siderably greater than the front, which comprises two, three, or even four windows, according to the pretensions of the building.

The country-houses also have something essentially English in their construction. The main point of similarity consists in the fact that they almost unexceptionally exhibit a studied irregularity of shape and a mediæval appearance. No attention is paid to symmetrical arrangement, and the rooms are distributed either as most

calculated to insure comfort, or according to the fanciful pleasure of the occupant (see Fig. 637). The picturesque element is universally prevalent, not only in the great seats of the aristocracy, but even in the cottages of the peasants. These cottages are frequently erected without any pretensions to any architectural style, with thatched roofs, &c. On the other hand large country seats are usually either mediæval castles in the Tudor Perpendicular style (Fig. 638), or else display that heavy Renaissance style which is peculiar to England, and called the Elizabethan, sometimes with an admixture of the Tudor style. In some instances they follow that development of Italian Renaissance known in England as Palladian.

It must be remarked that this predilection for picturesque effect

Fig. 638.



Balmoral Castle in the present day.

and unrestrained arrangement of plan and external appearance to meet the requirements of the case, is not confined to dwelling-houses, but extends to buildings of the most varied descriptions, and is usually accompanied by great simplicity in design, and the material and construction employed are turned to account as decorative features.

§ 406. In the foregoing paragraphs the modern architecture of Germany, France, and England has been described, inasmuch as in those countries definite phases or schools can be selected for description, whereas other countries, with unimportant exceptions, follow the architectural lead of the three above mentioned. Thus the Scandinavian countries can be for the most part comprised in the German schools of Berlin and Munich, though here and there a French influence may be perceptible, owing to the residence of individual architects in Paris. No definite independent character is displayed in the various public architectural undertakings, whilst, to judge from Copenhagen, private buildings have no claim to any particular style, or to any merit for originality.

In Spain and Slavonic countries, with the exception of the Austrian Slavonic, the French school may be said to be prevalent, and indeed this statement may be said to extend, as regards a large proportion, to all buildings which are erected in the Turkish Empire by Europeans, or even under the guidance of their influence with due regard to the local Oriental taste, though in Slavonic countries the Russo-Byzantine style is employed for churches, and the Moorish remains prevalent in Turkey and throughout the entire East. On the other hand, the English method of treatment is followed in North America and the various territories which are under the sway or influence of Great Britain, as, for instance, in the East Indies and Australia, whilst in South America Spanish and French influences are more powerful.

§ 407. The present opportunity must be taken of alluding to an endeavour, which has lately been widely extended in Germany, to create an entirely new and national style. All considerations in this direction must necessarily treat of the impracticability of such a scheme (for no different result is possible), rather than of its realisation. The history of architecture teaches us that the different styles, corresponding with the intellectual and artistic status of various nationalities, have been gradually formed and developed from one germ by local, climatic, and religious influences, that a style has never and nowhere been elaborated by the mere will of any single individual, and that the expansion and highest development of any given style always corresponds to the intellectual tendency and the

status of civilisation of any given nation, as well as to the æsthetic perception of the epoch. The main forms of the various styles are based upon and influenced by the nature of the building to be erected, as well as by the particulars of their construction and by the material employed, whilst the feeling so prevalent among men that what is must be, also exercises its power where all future efforts are so vague and indefinite.

If, however, a new style is really to be discovered, an acquaintance with the various styles which have been received from antiquity is prejudicial rather than advantageous, since the necessary impartiality of ideas is almost impossible, inasmuch as the influence of study and the knowledge of preëxistent forms must inevitably, although perhaps undesignedly, influence new creations and ideas—the elements of new formations must necessarily be based on reminiscences of those already existent.

The question here suggests itself, whether, amid our contradictory efforts in the architecture of the day, the germ is not deficient which should eventually ripen to good fruit. Before fruit can be obtained, the graft must give evidence of life and fruitfulness !

When the more enlightened traffic and interchange in intellectual and material objects, and the obliteration and disappearance of national points of difference thereby effected are taken into consideration, it is impossible now-a-days to speak of a style as distinctively national. If we were able to discover a style in accordance with the spirit of the age, that is to say, one which would be suitable for our requirements, our habits, our method of viewing various questions, and our artistic status, then this style being universally applicable, and consequently the expression of our age, would not be exclusively German, French, English, &c., but *universal*, and only subject to modification in the manner in which it was understood by various architects, and owing to local influences and the extent to which the same were brought into play. The discovery of such a style, however, cannot be regarded as probable, and in any attempt to find it the impress of various nationalities would declare itself. A unanimous effort in the right direction would, it is true, further the development and progress of architecture ; and a knowledge of this fact is already gaining ground in Germany.

§ 408. The only possible method of obtaining a new style in accordance with our æsthetic views and constructive means is at the same time that which even without these considerations must necessarily be followed, if that significance is to be attached to architecture to which it rightly lays claim, namely, that the constructive elements are to be adhered to and brought into prominence, and that they, in conjunction with the forms necessitated by the object of the building, are to be accepted as the foundation of æsthetic development and of the form that will be assumed both by details and by the building as a whole. Consequently truth of style must before all else be aimed at, so that it may become the real expression of the purpose, and of the means which are intended to be used in its accomplishment. This should not, however, be brought about rudely, and the artistic talent of the architect will be displayed on this very point by the skill and cultivated taste with which he may be able to elaborate original ideas, realized by beautiful forms, from such a treatment of the constructive elements. Naturally there are reefs to be avoided, on which many have already suffered shipwreck, such as want of harmony, which can easily occur through various materials being employed in conjunction, as, for instance, in constructions of stone and iron, especially when the unplastic nature of the latter is taken into consideration, and many others of the same sort.

§ 409. If, therefore, we wish for an architectural style in accordance with our age, both the purpose and internal truth must be predominant, and at the same time everything that savours of pretence and unreality must be avoided: that is to say all forms which represent something which they really are not, and express intentions which are not existent. The forms must be characteristic of the aim and object of the building. An æsthetic reciprocal relation of the spaces of the interior and the forms of the exterior, of the means employed and the results thereby produced, should be visibly prominent everywhere and pervade the whole structure. This must throughout take place in a complete and harmonious way, if an æsthetically cultivated taste is to be satisfied with the result.

A further contribution towards a pleasing effect is offered by

many modes of decoration, which though they are not necessitated by the construction, yet are founded upon and assisted by it, and can be brought into conformity with it; and when these embellishments are introduced in the proper place and in a suitable way, more or less richness and elegance are not prohibited. Without excess of expenditure, and making use of these means, the architect who undertakes the task of constructing a building thoroughly in accordance with these principles and with its natural elements, will attain his object in a pleasing manner, if he be gifted with a happy appreciation of beautiful proportions, which are often alone sufficient to bestow a noble expression on a building.

§ 410. Very successful attempts of this sort have been made in the treatment of a class of buildings which belongs essentially to quite modern times, namely, railway-buildings; here fortunately neither antiquity nor the Middle Ages offer any possible prototype. Buildings of this class which are strictly conformed to the purpose for which they are intended, and to the materials of which they are constructed, are the most worthy of praise, and in many instances edifices have been erected that are not only commodious and practical, but also pleasing in appearance. It is to be regretted that a conformity with architectural truth and constructive purpose does not always please the public, who praise, what strikes the uncultivated eye as stately and magnificent, whilst really it is incongruous and discordant. The introduction of Grecian and Roman temple forms in the fronts of railway-stations may be mentioned as an example of this incongruity, and buildings like the railway-station at Brunswick receive more praise than structures whose style is infinitely more in accordance with the purpose for which they are intended.

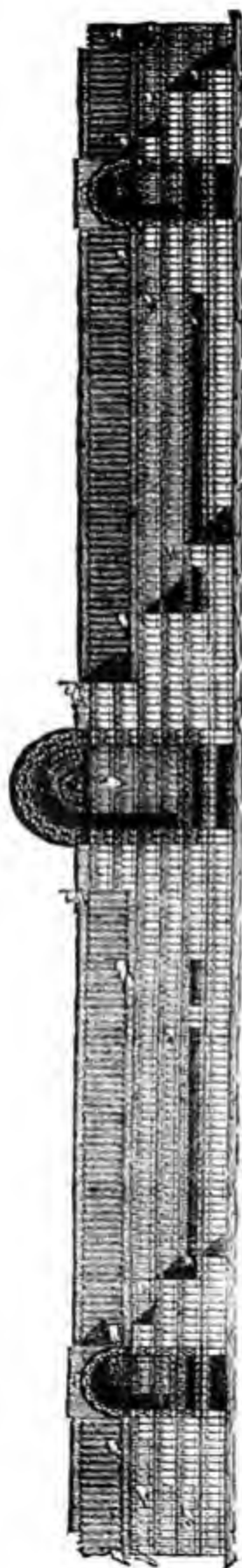
§ 411. In order to complete our subdivision on the architecture of the present day, it should, moreover, be mentioned that by the employment of iron a new constructive material has been introduced into architecture, and one that is destined to prove an important element in the determination of the form of many buildings. Several new kinds of buildings even have been called into existence by its application, such as glass palaces, suspension and tubular bridges, etc.

Iron has also especially exercised a great influence on railway archi-

ture through the construction of large terminal station roofs of this material with wide spans, and the metal is employed not only for the roofing, which is left visible, but also for supports. Iron is also much used for market-halls, as, for instance, in the *Halles Centrales*, at Paris, which are to be considered as the best of all such constructions both as regards their extent and their architectural value. But a harmonious combination of the slender forms of iron with stone offers great difficulties in monumental buildings, and previous periods and styles present nothing analogous; therefore these new means of construction which have been acquired by the employment of iron will scarcely be used in the architecture of buildings in which a monumental significance is intended to prove a prominent feature, as for instance in churches, without running the risk of marring or destroying the effect altogether.

It consequently cannot be expected that this new means of construction will develop a new universal style of our age, admirably suited though it may be for certain kinds of buildings. This does not entirely exclude an employment of iron in constructive parts under artistic treatment; in fact it can be suitably introduced either alone or in combination with some other material, both æsthetically and in accordance with style. A proof that this at least is practicable in the case of interiors is shown by the large hall of the Library of Ste. Geneviève, and by the new reading-room of the Imperial Library in the Rue de Richelieu, which were both constructed by Henri Labrouste on the above-mentioned principle.

But perhaps the most effective and suitable employment of iron is shown in connection with glass, as has been exemplified in the temporary buildings for exhibitions, for which the Great Exhibition in London, in the year 1851, furnished the model which has so often been followed subsequently. This building was afterwards removed to Sydenham, and is now known as the Crystal Palace. In this structure the walls as well as the vaulted roof consist of glass inserted between iron girders, after the pattern of large conservatories and winter-gardens, especially of that in the Champs Élysées at Paris, which is no longer in existence. Although this building (fig. 639) scarcely seems like an architectural construction, but appears to form a peculiar specialty, still an impression is produced, which is



Facade.

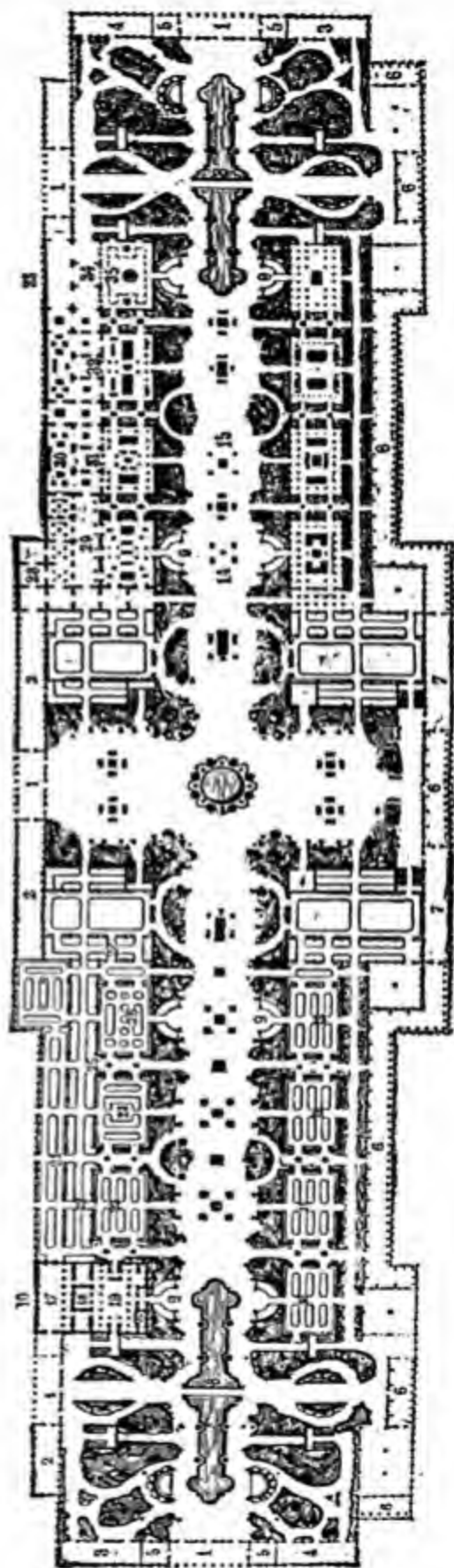


Fig. 639.—Ground-plan of the Crystal Palace at Sydenham.

hitherto unparalleled by its transparent termination in all directions, and by its dimensions, which have never been before attained in enclosed spaces. The distinguishing height of the main body of the building, which is divided into several naves and galleries, and of the loftier transept, which is 174 English feet high, is too considerable to recall the conservatory, which first suggested the idea to Paxton of constructing such a building on a large scale for the Great Exhibition. The visible stability of the system of construction gives a certain feeling of security as a counterpoise to the astonishment which the enormous size creates. On the other hand it is not to be denied that artistic execution in the forms of the constructive parts is wanting, though many difficulties would perhaps have had to be overcome to attain this without the structure suffering as regards solidity. These constructive elements, moreover, are not used as leading to further æsthetic development, so that a real artistic value can only be attributed to the novel impression of the whole, which is produced by the large dimensions and transparent walls.

§ 412. After the detailed description of architectural styles which has now been given, it may not be amiss to add the following table of styles, which is to a certain extent the résumé of the whole. The author has already published it in the *Cotta German Quarterly* for 1854, and endeavoured there to characterize the styles with which we are acquainted by individual attributes, with a view to assure an easy comprehension and comparison of the same.

I. Old Indian Style.—Childlike helplessness. Pretentious mode of expression combined with mythical freedom of imagination.

II. Egyptian Style.—Solemn earnestness and imposing aspect.

III. Grecian Style.—Nobility of expression and of the whole effect. Stately calm.

IV. Roman Style.—Manly vigour in form and conception.

V. Chinese Style.—Punchinello.

VI. Early Christian Basilica Style.—Expression of independence with the struggle for freedom from foreign influences.

VII. The Romanesque Style.—An expression of melancholy, but at the same time combined with geniality in sacred and private buildings, and grimness in castle and strongholds.

VIII. Moorish Style.—Free-vent to over-wrought fancy, and eccentric tone in conjunction with spectacular display. The spirit of chivalry permeates the whole.

IX. The Pointed or Gothic Style.—The expression of inward faith till it attains exaggerated enthusiasm, ever pointing heaven-wards.

X. English Late-Gothic (Tudor) Style.—Gives the notion of practical worldly-wisdom and self-reliance, and pursues its own course when allied to what is incongruous.

XI. Renaissance Style :—

Commencement : Delight at meeting again after a long separation.—Approaches.

Middle : Appreciation and influence of new relations, established after a long interruption.

End : Feeling of uneasiness ; efforts to attain freedom.

XII. Baroque Style.—Freedom when attained misused to excess. Afterwards the following phases occur :—

1st Phase : Stagnation.—Physical and moral exhaustion.—Sleep.

2nd Phase : Transition to waking and rousing, owing to various influencing forces and visions of the past.

3rd Phase : Beginning of the present century lethargic and meaningless wanderings, clinging now to this, now that prominent object.

4th Phase : The present day.—Fully brisk and awake, but still under control.—Efforts to find the right path, at one time approaching, at another departing from the smooth track, because the goal still appears indistinct and assumes various aspects.

§ 413. The relations between artists and the world at large are reciprocal ; art is neither formed nor developed by one of them alone. The endeavours of the artist can only be effective when they correspond to the spiritual and intellectual feelings of the people. Artists are only able to raise art to its highest pitch when an appreciation of and a desire for artistic productions have become universal, and are conjoined with a general perception of what is good and beautiful in art. After this level has been attained, the criticism of the people at large who have been trained and rendered intelligent

judges by good works of art, reacts on the artist and urges him to attain a higher stage of development.

It therefore seems necessary, if the efforts of architects are to attain the wished-for results, that the principles to be followed should be known to non-professional persons, and especially to all educated people, who exercise any influence over public opinion, and, lastly, to those engaged in industrial pursuits, who by their works are called upon to second and facilitate these efforts on the part of the architect.

It is hoped that this book will in some degree contribute to bring about this happy result, by helping to arouse a feeling for, and a general interest in, architecture as an art and in its works, and by explaining much that renders it difficult to discriminate between the good and the bad. Much would be gained by the whole community beyond the satisfaction which persons of culture cannot but feel, in critically distinguishing various styles, and estimating the value of each.

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